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# ANNUAL REPORT

OF THE

## SECRETARY OF INTERNAL AFFAIRS

OF THE

COMMONWEALTH OF PENNSYLVANIA.

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PART III.

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INDUSTRIAL STATISTICS.

VOLUME XXIX.

1901.

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1902.



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REPORT

OF THE

Bureau of Industrial Statistics.

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COMMUNICATION.

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Department of Internal Affairs,  
Harrisburg, Pa., June 30, 1902.

To His Excellency, William A. Stone, Governor of the Commonwealth of Pennsylvania:

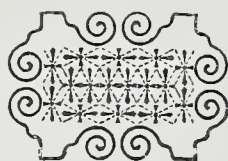
Sir: In compliance with the requirements of the Constitution, I have the honor to submit herewith, for transmission to the General Assembly, the twenty-ninth annual report of the Bureau of Industrial Statistics, the same being Part III of the reports of this Department.

I am, very respectfully,

Your obedient servant,

JAMES W. LATTA,  
Secretary of Internal Affairs.

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LETTER OF TRANSMITTAL.

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Harrisburg, Pa., June 30, 1902.

Hon. James W. Latta, Secretary of Internal Affairs of the Commonwealth of Pennsylvania:

Sir: I have the honor to present herewith the twenty-ninth annual report of the Bureau of Industrial Statistics. The report covers the manufacture of boots and shoes and cement, with illustrations; the tanning industry and the manufacture of pig iron, steel, rolled iron and steel and tin plate. It completes the 1892 comparative series, and continues the interesting 1896 comparative series.

Very respectfully,

JAMES M. CLARK,  
Chief of Bureau.



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INTRODUCTION.

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Interest is added this year by the presentation of the manufacture of boots and shoes in the State, and the accompanying article on their manufacture. Footwear is treated exhaustively from the cobbler of oriental times up to the present day, and to our own country, with our mammoth factories, from which salesmen are sent into the remotest parts of the world. It is the first presentation as a census work the Bureau has given of the manufacture of boots and shoes in Pennsylvania, and the volume of business done will be a surprise, even to the most observing, and that Pennsylvania still continues to lead in producing the material out of which these boots and shoes are made is fully exemplified by the census of the tanning industry which this report contains.

Another feature of the report of absorbing interest is the manufacture of Portland cement. Pennsylvania produces the coal and iron and steel of the world, and it will not be surprising if she should, at no very remote date, lead all of the world in the production of Portland cement. The growth of this industry in the United States since 1890 has been remarkable, and in this, as in many other industries, the United States is but a synonym for Pennsylvania.

The departure contemplated last year of not confining the rolling mill production to iron and steel rolled into finished form, but of including the billet, muck bar or any of the many less finished forms of production, has in this report been carried out with satisfactory results. The departure not only has its benefits, but its difficulties. As a census work, the presentation is of materially increased value, but, as with all more comprehensive presentations, the difficulty has been to avoid twice counting of value. The facts as presented are true as to the people employed and the wages, and they are true so far as affecting the output of the respective plants or establishments, and while the value as given is the true value of the production as it left the plant, yet to entirely avoid the twice counting of values, there must be an actual separation of the billets, slabs, blooms, muck bar, etc., sold to Pennsylvania manufacturers from that sold to manufacturers outside of the State. While every effort

has been made to get such actual separation, we have found it necessary in a number of instances to use approximated figures.

It will be observed that 1901 shows a largely increased production of black plate for tinning, and of tin and terne plate, with steady values and increased wages.

As all our comparative work contemplates a series of ten years, with this report the 1892 Comparative Series, that is the series established in 1892, ends its mission.

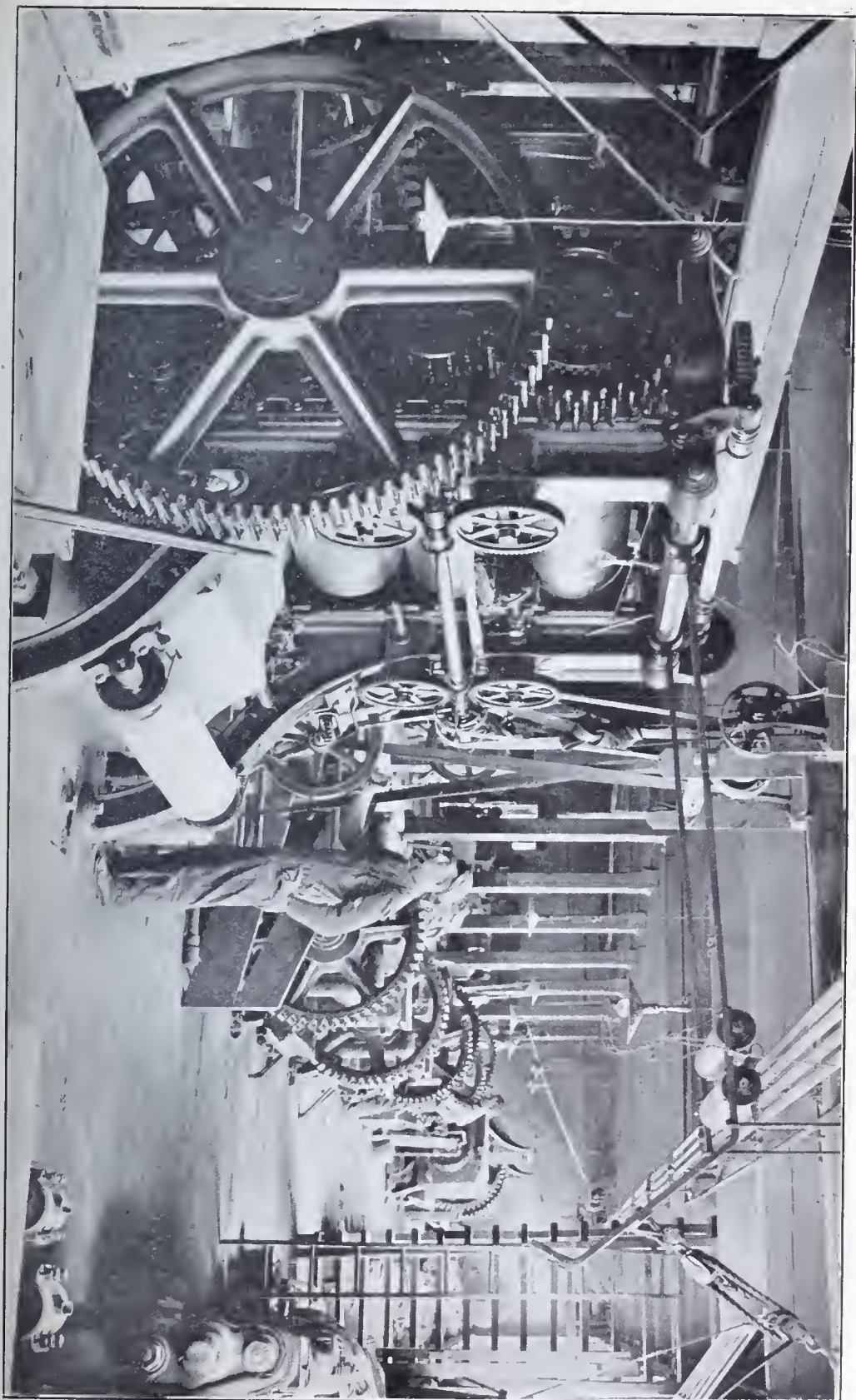
Some idea of the volume of business embodied in these annual publications may be had from the statement that in round numbers the industries herewith presented, after making necessary eliminations from the comparative series tables to avoid twice counting, represent 321,000 workmen, 160 millions of wages and 800 millions of value.

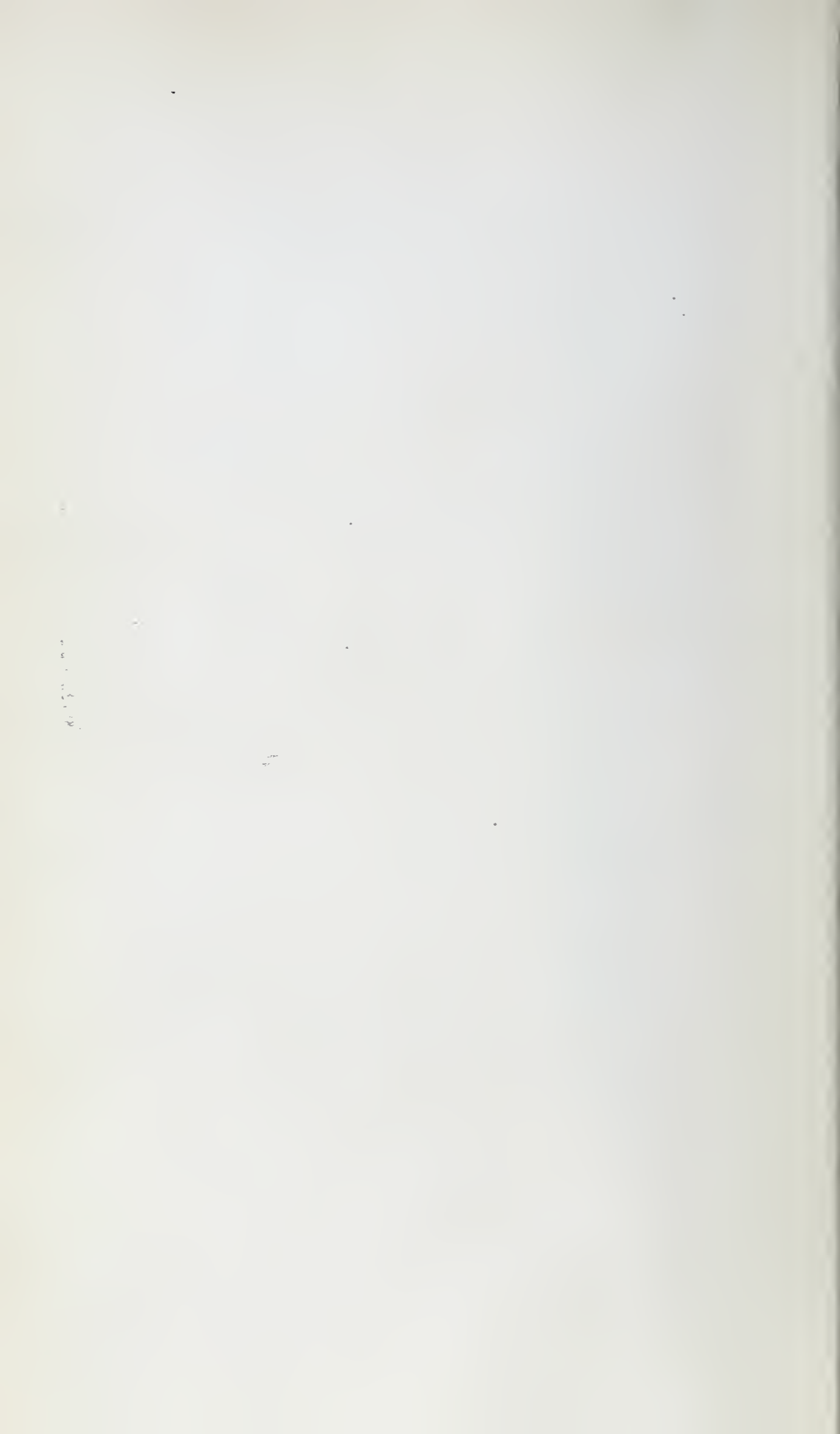
As the year has been one of much talk about strike prevention, conciliation, etc., and the best efforts of the strongest minds of the nation have been brought to bear upon this absorbing question, attention is called to the replies from manufacturers to the following letter, which accompanied the blanks for 1901 sent out in December, 1900:

"The labor question is so agitating the public mind, and so much thought is being given to the question of conciliation, that every successful plan of strike prevention, whether individual or organized, should, for the common good, be made available to the general public. To that end, if you have put into practice any plan that has proved successful in bringing about a better understanding, in adjusting grievances, or in preventing, or settling strikes, and will kindly tell us what that plan is, and what successes have attended it, you will confer on us a great favor, and, we believe, on the public a great good."

It occurred to us that the injection of such matter at this time would but add to the growing interest which is being taken in the work of this Bureau, and in connection with this thought it might not be out of place to say that the Paris Exposition of 1900 awarded the Bureau a gold medal for the efficiency of its publications.







## SHOES.\*

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### PRIMITIVE FOOTWEAR.

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Every civilized man, woman and child wears shoes of some description, and a part even of the savage peoples encase their feet in some sort of covering. Few, however, pause to think how shoes are made, where the leather they are made of is obtained, or how are produced the vast quantities of miscellaneous "findings" which contribute to the make-up of a complete shoe. Comparatively few people understand the various processes through which the raw material goes before being placed on the market as a finished product.

Ever since the making of shoes became a recognized craft, the shoemaker has played a conspicuous part in romance and fiction, and has been an interesting personage to authors of song and story. By some of them he has been lauded and honored; by others, derided and made the subject of merriment and ridicule. As an important character he has appeared in stage plays, poems and novels innumerable. As an embodiment of wisdom he has been idealized by the Chroniclers of the East, and as a hero the shoemaker has had the halo of romance thrown around him by more than one wielder of the pen. The gray-haired, horny-handed cobbler seated on a bench in his stall, with lap-stone and hammer, pounding out a precarious living, has been the subject of many a narrative. The Oriental story-tellers were fond of him. He appears in "Arabian Nights," among the thousand and one romances, and he is found in Indian and Persian legends. Wherever he appears in the romances of the Oriental story-teller, the shoemaker is a fellow of infinite jest and droll good humor, preternaturally wise, merry and resourceful. Horace, the renowned poet, did not disdain the cobbler. The Horatian shoemaker is a man of wisdom, a person of light and leading. That famous little romance, a favorite of Oriental scholars, which tells the story of "Ahmed, the Cobbler of Ispahan," is full of human nature and as true in its portraiture to-day as it was three thou-

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\* For the Production in Pennsylvania for 1901, see the closing pages of this report.



sand years ago. In one of the Greek dramas allusion is made to the daily earnings of the shoemaker, and it is known from historical record, that the streets of Rome were encumbered with shoemaker's stalls in the reign of Domitian. But as the Factory System has gradually increased and come into general use, supplanting the old-time cobbler, much of the romantic element associated with the calling has passed away and with it many of the characteristic legends and peculiar practices of shop tradition. Still there are few common-place articles of every-day use so replete with romantic and interesting observation as shoes.

The oldest or rudimentary forms of covering for the feet were sandals, a flat sole to be worn under the foot and fastened to the wearer in various ways by thongs passing between the toes, around the heel and over the top of the foot. Many and varied have been the additions to this simple footwear.

Because of its ancient origin, its peculiar and slow development through the various stages in the course of evolution by which it has arrived at its present complete and artistic perfection, the story of the shoe is interesting to the maker, the seller and the wearer of this indispensable article. Although it is probable that foot coverings of the most primitive sort were adopted as protection, it is nevertheless apparent that the first advances in footwear were also for the purpose of decorating the feet, rather than for utility alone. Even to-day, in some foreign lands, shoes are valued more for their ornamentation than for their serviceable qualities. This is evident in India and other Oriental countries where elaborately embroidered shoes are prized for their gaudy appearance rather than for durability. North American and Canadian Indians fantastically decorate their moccasins with bead work.

Research establishes the fact that ornamentation preceded utility. Some three thousand years ago, in Egypt, protection to the feet was entirely unknown. The pedal extremities were stained or painted. Orange color seems to have been the favorite hue, as it is frequently observed on the lower extremities of mummies, denoting its use in ancient Egypt. The same practice was followed by Hindoo women of the lower class and is observed in some quarters of the globe to-day.

Sometimes enormous anklets made of metal or bone, strings of wild animals or shark's teeth, or heavy metal rings on the toes are added to the decorations of the lower limbs by some of the wild tribes of the earth. While the women were staining their feet with orange color and adorning their toes and ankles with metal rings, it remained for a man to invent the first shoe. This was an incipient sandal, consisting of a mere strap, which passed under the heel and was secured over the instep. This is supposed to have

been the earliest style of footwear. From this crude beginning has been gradually evolved by the ingenuity and skill of shoemakers during the centuries, an article indispensable to man, in use almost the world over. Commercially, the shoe industry, which gives employment to thousands and puts into circulation untold volumes of money, is in importance probably second to none. Without shoes comparatively little glazed kid or sole leather would be used and a vast quantity of lesser materials manufactured especially for use in making shoes would be valueless.

It must not be supposed that the style of footwear passed directly from the open sandal to the closed shoe. The change was very gradual, and required decades to accomplish. Link by link has the chain of change and variation been forged, until down through the centuries, from the simple covering in vogue with the antediluvians, the beautiful artistic article of the twentieth century, with its elegant lines and graceful curves has been evolved.

Specimens from ancient Egyptian tombs indicate that sandals were made of plaited palm leaves, of papyrus stalks interwoven like a mat, or of leather. Latchets were sometimes passed through thongs at the sides of the soles, in order to provide fastenings. Sandals were sometimes pointed and turned up at the toes; those for the priests, we read, "were of strips of palm leaves nicely fitted together and furnished with bands made of the stems of the papyrus plants." Ancient Hebrews used similar protection for the feet, often having a sole of linen cloth, felt, leather or wood, and sometimes protected with metal. Those worn by the soldiers were of brass and iron. Knights of a later period wore covering of steel or brass, in conjunction with their armor or coats of mail.

In ancient times there was attached a symbolism to nearly everything and not least among them was footgear. What would appear ridiculous to our modern civilization and customs, was held sacred in centuries gone by. To take the shoes from a captive was equivalent to a sentence of imprisonment; the restoration of the shoe indicated liberty. So, in the parable of the Prodigal Son, putting shoes on his feet denotes the father's reception of the penitent as a free man and as a son. To cast one's shoe over certain lands was to claim their possession.

Among the Romans the shoe was symbolical of rank or station. No one below a certain position could wear red shoes, and only Senators could have four latchets. This number made the shoe reach to the middle of the leg. It was then of light material, adorned with gold and silver crescents and precious stones. These splendid shoes were doubtless known to the ancient Britons while the Roman ruled them, but the Saxons retained their own rude "bootees" of raw hide, slit across the instep for greater ease and

freedom. As time passed and they became more refined, they dressed and tanned the skins, and dyed them brilliant colors; or, oftentimes they gilded them. Shoes taken from the tomb of Bernard, grandson of Charlemagne, are made of red leather, with wooden soles and made rights and lefts.

In Egypt and Syria, taking off one's slipper and striking another with it or throwing it at him is still a customary token of renunciation, as an unworthy son and, perhaps, playfully, of a daughter leaving her parents at her marriage, from which comes the curious old custom of throwing old shoes for good luck after a bride and bridegroom departing for their new home. It is learned from several passages in the New Testament that the untying of sandals, as involving considerable trouble, was assigned to servants; the loosening of thongs or latchets, therefore, became a symbol of servitude.

Sandals of Hebrew women were made of skins of badgers and of other animals, and were frequently elaborately ornamented, probably with thongs embroidered with silk, silver and gold. Sandals were not usually worn in the house, but were put on for outdoor business or a journey, or for military expeditions.

Mohammedans now remove their shoes on entering a mosque, and Samaritans on approaching the site of their temple, do likewise. To bind on the sandals, to loose them, to carry them until needed were the duties of a servant or slave. The poor Hebrews often went bare-foot from necessity, but among the middle and upper classes this was a sign of mourning. Sandals were put off in token of reverence and of moral defilement, hence, the priests ministered bare-foot in the temple.

Assyrians wore a sort of half-slipper, encasing the heel and sides of the foot, but leaving the toes bare. It was made of wood or leather. Modern Turks, Assyrians and Egyptians now wear a light shoe resembling our slipper and sometimes a wooden shoe with a high heel. The Bedouins wear only sandals.

Among the ancient Greeks and Romans the use of shoes was not general. The youths of Sparta were trained to go bare-foot in order to harden them, and the heroes of Homer are usually described as without shoes when armed for battle. The shoes of the peasantry of the Abruzzi, in the south of Italy, to-day bear a close resemblance to the ancient Egyptian and Grecian footwear. Greek women, however, wore shoes and their use finally became universal. There was great diversity in their fashion and the several sorts were named from the person who introduced them, or from the place where they came; as the shoes of "Alcibiades," "Persian," "Cretan," "Athenian" shoes, etc. The "calceus" were like modern shoes in form, covering the whole foot and were tied with latchets or strings. Those



worn by senators and patricians were high, like buskins ornamented with an ivory crescent and called "calceilunati." Some were made with tops and of all heights, even to covering the whole leg. These were called "calceamenta" and "cothurin." The tops were often of the skins of wild animals, lacing up in front and ornamented at the upper extremity with the paws and heads arranged in a flap that turned over. The skin was dyed purple or some other bright color, and the shoes were variously ornamented with imitation of jewels and sometimes with cameos. It was common to make them open at the toe, so that this part of the foot was left exposed. In our own country discoveries of ancient footwear have recently been made which provide interesting matter for reflection. In Colorado, relics of the old cliff dwellers have been unearthed that are of great value to the antiquary, and among them are some that appeal directly to shoe and leather men. Thousands of years ago these peculiar people are said to have lived and pursued their occupations in the western part of our continent, long before Columbus thought of searching for America. Leather goods of various textures, from the soft and perfectly tanned buckskin to others as fine and pliable as it would be possible to produce by any method known to-day, were found among these relics. There were also sandals formed of the skins of animals and woven from the fibre of the soap weed, with soles so firm and durable as to prove a perfect protection to the feet in clambering over the sharp rocks of that country. Others were formed of corn husks, in as good a state of preservation as if of but a seasons growth, while many were half finished or but just begun—a task, indeed, never to be finished, but valuable to us in proving unquestionably that such articles were made and worn by a race of people who inhabited this hemisphere centuries ago.

Leaving the subject as it relates to the ancients and coming down to medieval times, we find, toward the close of William the Conqueror's reign, boots reaching to the middle of the leg were introduced. They were made from the famous Spanish leather from Cordova, and from the Norman word "cordwainer," meaning "a worker in Cordova leather," has been anglicized the Saxon word "shoemaker." Later, we read of "slippers of purple with fret work of gold." Wooden shoes were in common use throughout Europe during the ninth and tenth centuries, and were even worn by princes, but sometimes highly ornamented leather sandals or shoes were worn. The use of wooden shoes, called "sabots," in Europe, is to-day confined to the peasantry. They are cheap and said to be comfortable, though they look clumsy and make a great clatter as their wearers trot along the paved streets. An effort was made to introduce them into this country, but without success.

Great attention was directed in the middle ages to this portion of the dress as well as to the covering for the head, and equal extravagances were adopted in both articles. The shoes were worn of different colors; the stockings also were unlike each other, and of different colors from either of the shoes. During the reign of William Rufus, a famous Dean, Robert, surnamed the "Horned," introduced shoes with long-pointed toes twisted like a ram's horn. The fashion was immediately adopted in France and carried over to England. Though vigorously inveighed against, the style became fashionable, and in the reign of Richard II the points kept growing larger until they reached the length of two feet, and were secured to the knee by chains of silver and gold, the point of the shoe extending away beyond the toe. The upper parts were cut to imitate the windows of a church, and the whole was made extravagantly conspicuous. For three centuries the clergy, popes and public officers sought in vain by declamations, bulls and orders to break up the custom, but fashion held sway, as it has in every age in the history of the world, until, by act of Parliament in 1463, shoemakers were prohibited from making for the "unprivileged classes" any shoes with points more than two inches long, and afterward excommunication was denounced against any person wearing such. The extravagant taste was then directed to the width of the toe, until at last Queen Mary was compelled to restrict this by proclamation to six inches. As we view the gradual widening of the shoes being made now, let us fervently hope that the breadth may not grow to equal the width of those mentioned, or that we shall be obliged by decree of fashion to wear such monstrosities as the ones described.

In the sixteenth century shoes were made of elegant buff-colored Spanish leather, with tops of enormous dimensions, spreading over so widely as to almost obstruct the movement of the feet. The Puritans wore such boot tops and after the restoration of Charles II, the French custom was introduced of ornamenting the upper edge with lace. Pictures and stories of Spanish buccaneers illustrate the pirate-kings rigged out in this sort of footwear. The present simple form of shoe was adopted in the early part of the seventeenth century, and in the latter part of the same the shoe buckle began to be used. During the succeeding century, this continued to be very conspicuous and so many were dependent upon its manufacture in England, that when it began to be unfashionable, in the commencement of the present century, the Prince of Wales sought to keep up the custom for the sake of the buckle makers.

In the present popularity of colonial ties, with steeple heels and Dutch buckles, we see a revival of a style of a hundred years or more ago. Shoes worn by ladies in the last century were sometimes



very elaborate and costly, made of bright colored silk, ornamented with gold or silver stars and bound with different colored silk from the shoe itself. It is a singular and interesting coincidence that with the ever changing styles, the new fashions are often old fashions revived. Several years ago our dames and damsels were tripping about on high-heeled red slippers. Probably few of them ever dreamed that the fashion was first set by the Spartans and followed by the magistrates of Rome on ceremonial occasions. And the pointed toes, which a few years ago tortured us and distorted our feet, and which have more recently been succeeded by the rational, sensible and comfortable broad-toed footwear were invented by a Prince of Angou.

We see, therefore, that boots and shoes of all kinds have been worn; shoes made of leather, wood and reeds; brass-bound, iron-bound, gold embroidered and studded with jewels; wide, blunt toes, narrow, pointed toes. The Elizabeth shoe was a really artistic affair, and when powdered with gems and worn on the foot of a Sidney or a Raleigh, was a beautiful thing. When Leicester received the Queen at Kenilworth (Scott) "he wore shoes of white velvet." The Queen, herself, was a connoisseur in shoes.

The shoe had developed into the boot about the middle of the fifteenth century, and into stout boots, with tops and spurs. Then boots were so heavy that their removal fell to the lot of an attendant. After the revolution of 1688 the immense roses on shoes were replaced by buckles and large wide strings. Since that period the buckle has undergone every variety of form and dimension, and, in 1777, buckles and buttons on the coats became enormous.

High-heeled boots were worn by ladies for three parts of the eighteenth century. They raised their fair wearers some inches and rendered walking difficult and running out of the question. Very curious and to us interesting, is the footwear of the past. A few days ago the writer examined a couple of pairs made as recently as thirty or forty years ago. One specimen was a boot of green velvet plush, extra high, cut scalloped top, and faced with light blue kid. The boot laced at the side and was lined with brown drilling. The side opening, the scalloped top and the green plush tongue were bound with black galloon. It was Bismark, cut, with plain round toe and was made on straight last. The vamp was straight grain boned, scalloped all around and stitched with white. The heel was extremely high and narrow, with small top piece; the shank was decidedly sprung.

Clothing for the feet, therefore, whether in the form of sandals or shoes, has been in use in every country aspiring to civilization in ancient and modern times, and by a study of the subject we will find much to interest and instruct us. Change in styles, is one of

the inexorable demands of the public and has been in every age and throughout every land since shoes began to be worn, and this is true in regard to footwear as well as every other article of apparel.

### Shoes of All Nations.

A careful review of the character of national footwear now in vogue in various countries of the globe forms a very pleasant and profitable study, and in a trip around the world it is interesting to observe the kinds of foot-covering worn by different peoples. Of the great variety of footwear worn by different nationalities, none are so uncomfortable, unnatural and nonsensical as those worn by Chinese ladies of rank. These ladies consider the diminutive size of their feet an unquestionable evidence of high rank, so the Chinese mothers distort and shorten the feet of their infant girls, by bending the tender little toes under the foot and binding them there. The toes form part of the sole of the foot; the heel is forced up into the ankle, which is usually large. All during their childhood the growth of their pedal extremities is checked by bandages, causing excruciating pain and distorting the feet in a disgusting manner. Some of the diminutive foot-coverings are but four and a half to five inches in length on the outside. They are made of gray or blue brocaded satin, richly embroidered with designs in red, green and gold thread or colored silks. The soles are covered with pale blue cloth and have a thin piece of leather tacked to the bottom. Others are of green and white satin, embroidered in Persian colors, and exceptionally dainty ones are of bright red satin, with very pointed toes, beautifully worked in pale blue and gold. So it seems there are styles in Chinese shoes as well as those of other nations, but it does not seem possible when contemplating the romping, rollicking American "youngster," that full grown adults on the opposite side of the globe can go mincing about on feet the size of which we would bemoan as a deformity on a child two years of age. Children of the "Celestial Kingdom" have their plain and fancy footwear, too, and doubtless admire "pretty new shoes" quite as much as the children with whom we are more familiar. One for a baby boy, is of red cloth, edged with green satin and fancy gimp. The toe, which is rounded and upturned, has appliqued on it the head of a beast with staring eyes, green silk ears and long whiskers of white silk dangling from a ferocious looking mouth, the combination being fearfully hideous and frightful enough to scare an American baby into fits. A shoe for girls of the lower classes is made of sterner stuff. The sole and high heel are cut out of a heavy piece of wood; the upper, which is made

of one piece of very stiff leather, is open at the heel and tacked to the thick sole with round-headed tacks. It is a gay little affair, however, for the heel and sole are painted black and the upper bright red. It may not be generally known that all Chinese women do not have deformed feet. This mutilation is more frequently in the south than in the north and in cities than in the rural districts. Normal sized feet are found in many provinces of the empire. Sentiment is growing in favor of permitting women's feet to grow to a larger and more nearly normal size than has hitherto been the practice. A change is coming, slowly, of course, as all changes come in China. It is said Chinese feet at birth are normal and that binding has no hereditary effect in generation.

The impression in this country is that Chinese footwear consists solely of the silk or cloth, felt or paper-soled sandals in the style worn by our "John Chinaman," but such is not the case. Boots of leather or shoes of combined cloth and leather are largely used in some sections of the empire.

The thick-soled, white-edged shoes seen upon the feet of the Chinamen here are all imported from China—most of them from Canton—where they are made by hand. The white edge of the thick, rigid sole is made of a material resembling plaster, and if it becomes soiled, can be cleaned and whitened again. Some shoes have the wide edge of this sole finished with a glazed or polished surface, which can be cleaned by rubbing it with a damp cloth. The bottom soles of these shoes are made of a number of layers of rather thin leather, placed one upon the other, making a built-up sole. This sole is stitched through and through in many places on regular lines, giving the bottom of the shoe a sort of quilted effect. These keep the feet dry and warm, raising them out of the wet and mud. The soles throughout are made quite flat, without distinction of right and left, and are always considerably shorter than the upper, the toe part projecting beyond the sole, in order to give a spring in walking. The work on Chinese shoes is neatly and trimly done, even on the cheap grades. There are some shoes without the characteristic thick, white-edged soles and provided with soles of leather only. The top of the Chinese shoe is of cloth or silk or satin, and the lining is of the same material. Velvet is often used on the tops, cut in patterns that are laid over the body of the shoe, which may be of silk or satin, in some bright color, while the velvet may be of black, producing picturesque and striking effects. Costly shoes are made of fine material, and are often richly embroidered, each section of the vast country having its particular fashion and mode of decoration.

During the rainy season, in the spring and in the north during the winter, leather boots with large headed nails in the soles are worn,



and the Chinese shops carry regular lines of them. The common shoes and slippers often have leather soles. The "Coolies" generally wear straw sandals, but very frequently adopt leather ones in preference. In Mongolia, for winter wear, the leather boots are lined with sheepskin, and felt shoes made in western fashion are in general use.

The Chinaman is very particular about his shoes; torn shoes are rarely seen. Cobblers are to be found in the streets with baskets or boxes containing bits of cotton, cloth, leather, nails, etc., for mending shoes. Cheap burial shoes with felt soles are made for the dead. Velvet slippers and velvet boots are fashionable and shoes for housewear are usually made by the women of the house. Children's shoes are highly ornamented as already stated, often with figures of tigers' and dragons' heads and the like. Women's shoes are highly ornamented and richly embroidered by themselves. Instead of stockings, the women wear bandages of white cloth. A piece of embroidered material is usually placed around the ankle to cover the portion of the leg between the trousers and the shoes, where all are tied together. This practice has been in vogue since the sixth century. The women's shoes have mostly a thin sole of wood, with a thicker heel piece covered with cloth. In the north of the empire, the women wear high heels under their flat soles for outdoor use in order to keep their elaborately embroidered shoes free from dirt. At home they use shoes like those of the men, with felt soles. For house wear, during the warm weather, the material is grass or split bamboo, and the sole is made of dried palm leaves, sewed together with strong twine. There is no heel piece and the sole is flat. An inner sole or lining of cotton cloth, Canton flannel or raw silk is sometimes inserted. They are strong and durable, and retain both shape and color.

All of the work upon Chinese footgear of whatever kind is done by hand. I remember seeing a couple of years ago three pairs of boots made in Philadelphia for the late Li Hung Chang and two of the dignitaries of his personal suite who accompanied the late Viceroy on his famous travels in this country. The samples sent by him from which these boots were made were worn by the three men at the time referred to. The uppers and tops, which formed a striking pattern of the regular riding boots worn by equestrians in this country, were made of woven satin material instead of leather. The linings were of silk and trimmings of velvet. The bottoms were of felt, three-fourths of an inch in thickness, with a rawhide outsole, quilted in the peculiar manner of the Chinese shoemaker. The new boots were of black glazed kid, lined with silk and had felt soles, the outside covering of which was chrome-tanned electric or gymnasium soling leather, instead of rawhide.

The work necessary to produce these boots in this country, where the art of shoemaking is so entirely different from that of the Chinese, can be appreciated only by those familiar with the business here, and the completion of the task reflected credit upon the ingenuity and cleverness of the American manufacturer.

The query as to whether or not the leather boot is to supercede the Chinese shoe is a problem too complex and intricate to intelligently prophesy upon, but whatever may be the ultimate outcome—and time only can unfold—it is certain that with the advent of Americans and Europeans, vast quantities of modern footwear will be introduced into the land of Confucious. Western civilization and methods are doubtless having their effect upon the deep-rooted conservatism of the Chinese. Every year finds them more reconciled to the customs of foreigners and who knows but what leather footwear may not slowly displace the Chinese shoe. Dealers of an enterprising turn should at least prepare for such an eventuality.

It is said great quantities of leather are tanned in China and used for many purposes.

In striking contrast to their Chinese neighbors, the thrifty, hardy little Japanese are quick to adopt progressive methods, no matter whence they come, and that people are so unquestionably advancing in the assimilation of Western ideas and enterprise which they pursue intelligently and thoroughly, that it would not be surprising to see European and American footwear universally adopted within a very few years. It is probable that in the near future, these busy little people will partake more of the fashions which prevail in what are commonly supposed to be more civilized communities. Since the introduction of European styles in clothing into Japan, European footwear likewise has come into increasing use. The ordinary demand for these goods is supplied mainly by local factories, but the home product is of the cheapest quality and though cheap, is far inferior in durability and finish to the foreign product, especially that of American manufacture. The consequence is that among the well-to-do Japanese, a demand is growing for imported boots and shoes. The principal requirement is that the toes be wide and roomy, because the sandals and clogs which are worn in childhood give full freedom to the fore-part of the foot and full growth results. Japanese do not bind the feet.

Imported boots and shoes are very largely worn by the better classes in the large cities. European footwear is used to some extent by military and naval officers and also by citizens. Low-cut shoes are preferred and the sizes range from four to eight. Glazed kid and patent leather shoes are affected by Japanese officials and gentry, and are a good deal worn by foreigners. By the average

citizen, however, russet leather seems to be the favorite. Boots are seldom worn by civilians, but are used by policemen, gens d' arms and soldiers. Calf-skin and coarse cowhide boots and shoes are also somewhat in demand. There is little call for ladies imported shoes.

The poverty of the great masses of the common people and the climate will prevent a very general adoption of the clothes of civilization, but the intercourse between Japan and America is becoming greater each year and the upper classes are rapidly adopting American manners and customs.

The suggestive name "sandal wood" grown in Japan is used as the base of simple footwear. This wood is very light and is still further lightened by hollowing out the centre. These sandals are attached to the feet by plaited or twisted felt cord. Sometimes shoes worn by ladies are lacquered and are fastened with a velvet band passing from either side the lower part of the instep and between the first and second toes.

The native foot-covering is a slipper made of rice straw of which there is great abundance.

The shoe in general use in the cities by the Japanese is an unique affair. It is built like an old fashioned wooden bench, and consists of a roughly shapen sole of wood with two pieces of wood set cross-wise underneath to form the heel and toe. The shoe is flat on top, with a round woven loop or twist of velvet fastened to it in the shape of a triangle, the point of the triangle coming nearly to the toe of the sandal and the ends near the heel. When being worn the great toe is thrust under one side of the velvet roll the other toes under the opposite side. The strap which fastens the velvet roll to the sandal at the point of the triangle, comes between the great toe and the one next to it.

Another kind of sandal is woven of coarse native straw like basket work, the soles being perfectly flat, rounded at the toe and heel alike. A twist of straw is fastened on to secure the sandal to the foot. These are worn in the villages and among mountains. They cost the merest trifle, soon wear out and are thrown aside. In the agricultural districts foot-coverings are scarcely worn at all.

It is the custom in Japan as in most eastern countries to remove the shoes upon entering a house or temple. The house slippers, which are made of straw, with no heel or back, consist of merely a vamp, in the style of some toe-slip bed-room or bath-room slippers in vogue in this country. They are often decorated with straw fringe or gilding and are easy and comfortable. Women seldom wear boots or shoes of any kind, the native straw and wooden sandals being mostly used.



A very limited number of metal-tipped boots and shoes for children are used. Very good custom boots and shoes are made by the native and Chinese shoemakers, at prices which compete with the imported articles, and small shop work is rapidly increasing, but large shoe factories are to be looked for only as a possibility of the future.

When some of the beautiful specimens of first-class American shoemaking recently exported to Japan are exhibited there, demand for that character of footwear will no doubt increase. Some German shoe factories using American machinery are reported to be in operation in Japan and there is a movement on foot to organize a company for the purpose of erecting a building in Yokohama, installing machinery therein and making five hundred pairs of shoes a day.

The native shoe of India is a sandal, made of narrow strips of strong tan leather woven over the instep in a basket pattern, buckling behind through a stout strap and sewed to a strong leather sole. Among the queerest specimens from India sometimes worn by natives, but often adopted by foreigners is one perfectly flexible and yielding to every movement of the foot. Judging from appearance, they must be very comfortable and delightfully cool in hot weather. It is bemoaned by foreign travelers in India that natives do not know how to make boots and shoes and articles imported into that country are not much better.

It would be difficult to determine when boots and shoes of European pattern were first introduced to the favorable notice of the native shoemaker of India. It is probable that the Indian followers of St. Crispin took to making boots of European pattern about the beginning of the last century, whilst for many hundreds of years they have manufactured the sandal peculiar to India.

There are, in Hindoostan, numbers of native shoemakers and Oriental representatives of the craft, who apparently find it profitable to make "boys laced boots for school wear, patent leather buttoned boots, pumps and Wellington's." The tools employed by the "mochi," as the native shoemaker is called, correspond with those used by members of the craft in more advanced countries, but he does not make the same skilful use of them. As a maker of sandals he is a genius; as a bootmaker his workmanship leaves something to be desired. It is interesting to note that the "mochi" does not, as a general rule, seek the assistance of other operators. Unless he is doing a comparatively large business, he is his own cutter, fitter and laster. He is sometimes assisted in the operations by his wife. Following out his principle, he himself cuts out the boot, tacks the upper to the insole, sews in the welt and attaches the outsole, and builds up and fastens on the heel. He also does the edge

setting, the rounding, polishing and final cleaning up. He is his own designer and cutter as well as manufacturer. The position assumed by the "mochi" when working is much the same as that usual among the European operators, except that the "mochi" sits upon the floor. The hollow at the base of the breast bone occasioned by the pressure of the last, which is noticeable in St. Crispinites the world over, is by no means uncommon among shoemakers of India. Their ancestors in the shoemaking line sat on the ground and they continue to do likewise. The Oriental is an individual of conservative tendencies, he is opposed to progress. As he has clothed himself in the turban, white pajamas and short linen jacket of the pattern affected by his great-great-grandfather, so he has inherited his ancestor's methods of working and ideas in general.

It is said that importation of boots and shoes into Turkey is increasing. This is because the domestic goods are inferior in quality and higher in price. Cheapness is a matter of great importance. The better classes in Turkey wear fine shoes and half-boots. The shoes worn by the lower classes are a very cheap and badly-shaped article. Ladies' and children's wear are wholly imported, mainly from France, Germany and Austria. Hundreds of pairs of heavy workmen's shoes are annually imported from Malta. Overshoes are said to be customarily worn, both summer and winter and in rainy weather their use is general.

Practically there is but one boot and shoe factory in our sense of the term in the Ottoman Empire, namely, the Government establishment at Constantinople, where boots and shoes for the use of the army and navy are manufactured. These goods are nailed or sewed, and some hand power machinery is used. Turkish slippers, of which there are many manufactured, are made of goat-skins from the interior, dyed red, yellow, etc. They are familiar to us, being much worn for boudoir and smoking room use. They have pointed toes, which turn up and are often elaborately embroidered.

In many European countries wooden shoes, which were fashionable among the nobility in the ninth and tenth centuries, are in very general use among the peasantry to-day. They are cheap and durable and, though clumsy, are said to be comfortable. In this country an attempt to manufacture wooden shoes on a large scale was made in 1863, but the market was found to be limited and very few are now made. Those made are chiefly turned out in New York for newly arrived immigrants who reluctantly relinquish their wooden shoes as the last link which binds them to the "Fatherland," before adopting American dress fully and conforming entirely to western customs. The nearest approach to the European wooden shoe is the wooden soled clog, with leather uppers, made to some



extent in this State. They are worn by miners, dye-house workers, tanners, etc. The wooden soles, which are one inch or more in thickness, are entirely hand made, being sawed from great strips of wood and fashioned by hand. To that is attached by tacks or small screws the upper, which is cut from split leather. The uppers are medium high cut and fastened at the instep with strap and buckle.

All the Europeans who handle footwear admit the vast superiority of goods made on this side of the water, especially in style, finish and general get up. They are usually, however, considered too light for their taste, as their custom has been an inclination toward heavy and cumbrous footwear. The peculiar style of shoe for the London market, we are told, is rather short, wide fitting, with heavy soles, medium pointed. The local made shoes have side seams and are generally well made, substantial, good wearing shoes, but lack the style so familiar to Americans. In Europe it is much more common to wear footwear with heavy upper stock than in this country, where people have learned that a light skin makes as good fitting and fine appearing shoe, and in many grades fully as durable as a heavier skin. No doubt there is some foundation for the prejudice of the average American tourist against the clumsy, uncomfortable European footwear.

The contrast between the factory system on this side the Atlantic and that on the other, is very marked. A European shoe factory employing, say one hundred operators, will turn out two hundred pairs of welt shoes per day; an American factory, with the same number of employes, will produce from four hundred and fifty to five hundred pairs, and although the wages paid to the American workpeople are higher per day than those paid the European operators, the labor cost of their work is less per pair than that of the foreign producer.

The recognized scale of prices for the different operators is said to be higher in England than it is here, but the difficulty in running full time cuts down the average wage earned below that of our own artisans. Notwithstanding the amount of wages paid, freight duties, etc., our manufacturers are fast encroaching on foreign markets. The style of the goods, the expertness of the operators, the methods adopted in contradistinction with those observed abroad, all combine in accounting for American supremacy. Moreover, superior sole and upper leathers are tanned in this country and abundant supplies and the most ingenious machines are obtainable immediately at hand.

The description given the writer by a recently returned American tourist, of an English shoe factory which he visited in Leicester, will give the reader an idea of the methods over there.

"Those who expect to see old, ramshackle, tumble-down factory

buildings," said he, "will be agreeably surprised. The establishments are new, modern, substantially built structures. American machinery is employed and progressive methods adopted. The factories front on the street to the height of two stories, and are usually faced to a height of about eight feet from the ground with glazed brick; from that up pressed brick is used. The stock and packing rooms are on the second floor, the office occupying the space through the center of the same floor front to rear.

The factory proper is one story high, extending in the rear of the two-story building and is lighted by large sky-lights. A high ceiling admits of space for shafting and insures ample ventilation. The proprietor, from his commanding position in the office, has an unobstructed view from the end towards the factory, which is of glass, of every department of the works and can overlook in a moment all that occurs. Rules governing the management of the labor there, are different from those observed here. Work begins at eight o'clock; one hour is allowed for dinner, and the day's labors end at six, except when particularly busy and the factory runs until eight o'clock."

The evident intention of the European makers is to reproduce American style and finish and to imitate the footwear fashions in vogue in this country. Signs and show cards, indicating that American footwear is sold are plentiful in London and Paris shops.

Men's shoes in Paris are, for the most part, limited to few styles and have somewhat effeminate appearance, looking more like women's shoes than men's. They are poorly lasted, soon lose shape, and are not neatly finished inside.

A French woman may be magnificently gowned; her hat the latest Parisian creation, her jewels the most costly and her other garments faultless, but her shoes, unless imported from America, lack style and the general effect is entirely spoiled. "Bootees," flexible at instep and ankle, resembling accordeon pleating, are noticeable among poor women. Shoes with wooden soles and leather uppers are worn in Paris. Felt shoes are seen and wooden shoes are largely worn among the poorer classes. The manufacture of shoes in Paris is on a limited scale. Few large factories are there, but in adjacent towns many such abound where goods of a medium grade are made. Fine hand-sewed shoes are made in Paris, but their manufacture is confined to small manufacturers, who occupy a room or two for the purpose.

American products are steadily winning their way all over Europe, although it is only within the last few years that manufacturers have bestowed attention upon foreign markets as an outlet for their production. American manufacturers in other lines are successfully reaching more distant fields and demonstrating that American products can profitably compete with the manufacturers of the Con-

tinental nations, and why may not shoes be added to that category also?

An era of low-priced shoes appears to have struck European markets, the demand being largely for the cheapest grades. Manufacturers have, therefore, directed their attention to the production of a shapely and elegant looking shoe at the expense of its wearing qualities, and it would seem that if an article combining durability with tastefulness of appearance could be introduced it would sell well. Competition has become so keen across the water that manufacturers are using every means to cheapen production. Machinery and labor-saving devices are being introduced, goods are being turned out in large quantities to cheapen the cost and makers are selling directly to the retail trade to save middleman's profit.

Italian footwear is for the most part beautiful. Some are made of one piece of leather, the only seam extending from the ball of the foot to the first button. The upper leather extends down to the sole and heel, completely covering the latter. No tips are used and high cut shoes with high heels are the rule.

While foreign-made shoes for the most part are rough, crude-looking affairs, many are models of careful, painstaking workmanship. Some have embroidered fancy work, beading and other ornamentation. European boots are notably excellent.

A number of shoes made in Europe were recently sent to a manufacturer here to be duplicated. One sample was an infant's sandal of tan calf. It was McKay sewed and had paper stock lining. The heels had been attached with brass nails, evidently by hand, and instead of a spring heel there was merely a top lift. A fancy colored pompon instead of bow decorated the front. The channel was wide open owing to the absence of groove for the thread, which was much too large and coarse. Altogether it was an odd-looking shoe. Another specimen was a woman's button boot. It was made of sheepskin and had pasted heels, and sock lining of white sheep. This was a turn shoe, with a narrow toe. A black tassel decorated the front.

Shoemaking is one of the most flourishing industries in Russia. Leather boots and low or half shoes are mostly in use. Fine shoes are worn in the cities, while in the country only those of Russian manufacture are worn, owing to their cheapness and durability. The Russian manufacture is good and cheap, but is not so elegant as the imported goods. The shape of the average foot is pointed and narrow. Heels usually incline toward the Frenchy—high and narrow. Button and lace shoes are chiefly in demand in that market. In summer, low shoes have the preference. A large demand is for top boots. Officers wear an extra quality of calf and patent leather. The Emperor and all members of the Imperial



family, being officers of the army, are, it is said "always dressed—at church, ball or at home—in parade or field uniform, with their trousers inside their handsome patent leather top boots." The ordinary laborers wear a coarse quality of shoes, made of horse leather. The Russians manufacture a good article of rubber shoes, with American machinery, and export the same to most of the northern countries of the empire.

There is one large factory in St. Petersburg making boots and shoes with American machinery, and two or three smaller factories in Poland that also use American machinery.

In Siberia, leather is largely used as an article of dress by the natives. During the milder part of the year, a robe made of very pliable leather, stained with yellow dye, is worn outdoors and indoors is frequently laid aside. Women wear boots made of this leather. They fit tight to the leg and have at the top, a flap of black leather with red cloth trimming, which can be turned down and exposed for show in fair weather, or, in stormy weather turned up, bringing the boots to the thigh. On each boot are two large leather thongs, five or six feet long, to wind around the leg. Waterproof boots, called by the Russians "torbasis," are made there. These are cut from horse hide, steeped in sour milk, then smoked and finally rubbed well with fat and fine soot. They last exceedingly well and are said to be of inestimable comfort to the wearer, enabling him to tramp through snow, water and mud without inconvenience. The dwellings of the Siberians in winter have doors of raw hide.

The production of boots and shoes in Belgium is ample to cover the national wants and to partly supply Holland. Brussels, Antwerp and other large towns have a number of large factories. Luxury is not great in footwear, but some of the women's shoes come from Paris.

In Holland men's lace, button and congress shoes are in greatest demand. As a general thing styles are very poor and in a large majority of cases are quite shabby in appearance. In the cities, workmen in various industries wear common shoes. In the country the farmer's shoes are not quite as heavy as those worn by American farmers. The women use button or lace; in the better grades tips are worn and medium toes. In men's shoes, the tips are narrow and a little elongated. Materials most in use are satin-calf, calfskin, glazed kid and Dongola. Slippers and low shoes, with wooden heels, are worn. The average shape of boot is toward flat and broad. Paris made, high class shoes find a good market, while Vienna supplies only cheap slippers for women, in black, brown and white, with wooden heels. Local shoe manufacture is of importance and consists chiefly of hand work. There is demand for ladies'

fancy shoes at moderate prices, and workmen require low-cut heavy Bluchers.

Sweden, with its population of five millions, has a considerable consumption of leather and of boots and shoes. There are eighteen or twenty relatively large shoe factories and numerous custom shops, employing twenty-five to forty workers each, and new factories are being established. The greater part of the men's shoes manufactured in Sweden are made of horse hide, very seldom of calf or kangaroo leathers, but patent leather and all kinds of glazed kid in black and colors are used. The ladies' articles are made of calf, kangaroo and all kinds of kid and sheep leather. In summer the well-to-do men wear patent leather and colored calf-skin shoes; the ladies, morocco of different colors, among which even green finds a place. Brown and yellow shoes are very much in evidence among both sexes.

In Stockholm an American shoe factory has been established and American mechanics engaged in manufacture of shoes according to American methods. In that city also, are several more shoe manufactories, also numerous leather dealers and large shoemakers' establishments for hand-sewed work.

"In planning an incursion into the European markets, American manufactnrers of boots and shoes should not overlook Switzerland," writes a United States consul in that country. "During the past three years, boots and shoes amounting to \$28,860 have been imported from this country, indicating the invasion by American shoemakers. This increase averages about 50 per cent. each year. "These statistics," the report continues, "give only the figures of the direct importation and do not convey a correct idea of the number actually imported, for most of them come from distributing points in Germany, and are entered at the Swiss frontier as originating in that country. Although the manufacture of boots and shoes is one of the leading industries of the Swiss Confederacy, considerable importations, however, are made. Five years ago it was not possible to buy an American shoe in Switzerland, but now it is no novelty to see in the shop windows of the largest towns shoes with a little American flag displayed thereon, and the announcement that they are American made. At Lucerne, two year ago, there was not a shop which kept American shoes; last year five of them had them on sale, and sold out their entire stock and could have sold more had they had them on hand. This is despite the fact that one of the largest shoe factories in the world (turning out 5,000 pairs of shoes a day) is situated in Switzerland, and is an important exporter to the Latin-American countries."

It is estimated the four-fifths of the annual consumption of footwear in Switzerland is of domestic production. The general rule is rough, heavy, coarse leather footyear, usually cheap, unshapely and clumsy, although some of the local makers are fair.

A peculiarity of the Swiss boot and shoe trade is that a finer grade of footwear is made for their export than for their domestic trade, while the importations include both high and low grade shoes. The boots and shoes imported from the United States are of a higher grade and price than the domestic article. A considerable amount of the commoner footwear used by the agricultural and laboring classes, as well as by the poorer classes of citizens in the cities, is made in the penitentiaries of the cheapest material obtainable. Just as Switzerland both exports and imports boots and shoes she also does a considerable trade each way in skins, raw-hides and in leather. Owing to the great numbers of tourists in Switzerland, good retail stores abound.

In Germany, the styles of shoes are more modern and in conformity with American ideas, although the people in Germany apparently care but little for the appearance of their feet. If their other apparel is of good material and stylish in cut the people are evidently satisfied. Wooden shoes are largely worn by the peasantry; in fact, the number of wooden shoes still worn by Europeans in country villages is surprising.

It is said among the many fads of Emperor William is his passion for collecting boots and shoes of famous people; his collection of this particular article of attire constituting a fitting adjunct to his huge museum of uniforms. The collection is kept in the marble palace at Potsdam and there are some two thousand pairs, ranging from Greek sandals and a pair of slippers reputed to have belonged to the great prophet Mahomet, to the boots of Wallenstein, of Gustavus Adolphus, of Peter the Great and of Napoleon Bonaparte. It is said the Kaiser is desirous of adding some of the footwear of George Washington to this collection.

The writer recently met and interviewed a shoe manufacturer from Vienna, Austria, who was touring this section, inspecting some of the local factories in order to become more familiar with the methods employed in making American shoes. These methods have since been put into operation in his factory in Vienna. His establishment is now equipped with the most modern American appliances for making shoes, and is said to be the first in that city to introduce Goodyear machines. He manufactures men's, women's, misses', children's and infants' shoes, including soft soles and slippers. In 1885 he first started to manufacture in a small way and in the few years intervening his business has increased to present



proportions. Numerous cases of a similar character abroad might be cited.

One firm in Barcelona, Spain, operating two factories under the American system and after methods in vogue in this country, occupies an aggregate of 70,000 square feet of floor space. The firm manufactures 1,500 pairs daily of men's, women's, misses' and children's shoes, and employ 400 hands.

From far off Siam comes information that even the Siamese are adopting leather footwear.

American boots and shoes are said to be slowly gaining in popularity in Africa. Laced boots are mostly used there; very few congress, but a few buttoned ones are sold. Bluchers and heavy mining boots are sold in Johannesburg and other regions. Footwear with rounded toes and military heels are most popular.

It is said that the Boers have shoe factories for the manufacture of their own shoes. They also make crude saddles and harness for their own use, as well as belting and leather articles required in military equipment. They raise cattle, tan the skins, and complete the entire process of manufacture, so they are independent of outside supply for footwear. There are numerous shoe factories in the Transvaal, but it is said to be difficult to obtain contented reliable employes. Expert workmen are plentiful but the close proximity of the gold fields and diamond mines creates a feeling of unrest in the minds of workmen.

A London leather factor en route for home from Australia said to the writer recently, "While men's shoes worn in Australia are for the most part staunch and stout (although the climatic conditions do not seem to warrant such heavy footwear) glazed kid, is used to some extent in uppers for men's shoes. The increasing popularity of American goods is apparent. There is a strong sympathy in favor of American products and a growing tendency on the part of traders to give greater attention to their introduction and sale. In Australia up-to-date shoe factories have been erected and for the most part American machinery installed. In men's goods the greatest sale is in the medium and good grades; ladies' medium grades are the best sellers. The shops also run on cheaper grades of men's shoes, which, though lacking in style and finish, seem to suit the trade. The stockmen, boundary riders and roustabouts care little what shape shoe they wear so long as they have comfort at a low price. The Australian "bushman" is much in the saddle, and the light shoe is, therefore, proper weight for 'bush' trade, in the country districts remote from principal towns."

A peculiarity of some Portuguese shoes is that they have wooden soles and heels, with vamps fancifully made of patent leather, showing the flesh side of the skin.

The Persian footgear is a raised shoe and is cut a foot high. It is made of light wood, richly inlaid, with a strap extending over the instep.

The Muscovite shoe is a band woven on a wooden frame and little attention is paid to the shape of the foot. Leather is sometimes used, but the sandal is generally made of silk or woolen cloth.

The Siamese shoe has the form of an ancient canoe, with an open toe. The sole is made of wood, the upper of inlaid wood and cloth, and the exterior is elaborately ornamented in colors, with gold and silver.

In distant Siam, there is evidently a desire for artistic modern footwear. An order recently executed by an export firm for the King and Queen of Siam, consisted of forty-two pairs of slippers. Half of these were to be ordinary court shoes, the remainder Grecians. The embroidery on the court shoes extended around the shoes, on the front of which was the monogram of their majesties, executed in gold bullion. For that, as well as for the raised floral decorations, special embroiderers had to be employed, as the work was beyond the skill of the ordinary operators.

But enough of the old world and its curious shoes and quaint shoe-making. Let us turn to the newer world of our own western hemisphere. Our next door neighbors, the Mexicans, are great and famous leather workers. Most of their work is done without the aid of machinery, by small operators or individual artisans. Patient and painstaking must the leather workers be, for their task is long and laborious and great skill is required. The designs are first traced in the leather, then chiselled out with the aid of a small chisel and a wooden mallet. The blows must be dealt with even force, otherwise the design is spoiled and worthless. Practice makes perfect, and the leather worker soon becomes expert. But, however skilful the Mexicans may be in their decorative leather working, they are but inferior shoemakers, and the number of properly equipped factories in the republic is limited. There are, however, a few factories where shoes are made of Mexican leather according to American methods. Considerable business is done in imported shoes at about double price, and their superiority is unquestioned.

The Chilean government has fostered the native shoe and leather industries by imposing heavy duties on importations, and, in consequence, a considerable proportion of the domestic requirements are supplied by their own establishments. This obstruction to commercial freedom, however, it is said, need not prevent American manufacturers of boots, shoes and leather goods from considering whether or not they can push a better business in the Chilean market in the future than in the past.



Shoemaking is one of the principal industries of Valparaiso. The Chilean shoes are very light and do not last long. English shoes are preferred, as they are more serviceable, and some coarse and strong shoes are imported from that country. Very few American shoes are sold in Chili. Patent leather and shoes for children—the latter coming chiefly from Switzerland—are imported in considerable quantities, as few children's shoes are made there. It is said an English firm will soon establish a shoe factory there, with English workmen, for the manufacture of shoes.

In addition to the factories, there are a number of shoemaking shops spread over the country, in which footwear of fairly good quality is made to order. Chili is fertile, too, in the production of salted rawhides and in goat skins. Sole leather is largely manufactured in Chili and large quantities are exported. There are a few tanneries making upper leather, but it is not of much account, and French upper leather is imported. The patent and colored leather comes from Germany. There seems to be no good reason why American trade should not be extended in Chili and all South American countries as well as Mexico. The Chilean tanneries have not yet reached the point of making superior grades of fine leathers, which will doubtless continue to be brought from abroad for years to come. The establishments engaged in the manufacture of leather for shoes, harness and leather goods are few throughout the country. The largest of these factories, which are located in the chief cities, use some machinery; others employ hand work only.

In Brazil are a large number of shoe factories, the majority of which employ steam power and are operated on a considerable scale. At Rio de Janeiro and at San Paulo shoemaking forms an important industry. As a general rule, boot and shoemaking of the country is confined to the manufacture of the common kinds of men's wear. The hide and leather business forms a substantial item in the general trade and commerce of the country.

Boots and shoes are now being manufactured in the Republic of Columbia, and the industry is said to be growing. It cannot be said that the manufacture of these goods is done on a very large scale, however. They are made in small shops or factories and almost entirely by hand, very little machinery of any kind being used. The shoes made there are almost wholly for sale in the interior.

It is related of the women of Paraguay that they have begun to wear the modern woman's boot, which is somewhat of a social revolution.

A shoemaker who had settled in that country recently gave a handsome pair of boots to the wife of the gefe, one of the local

officials. That lady "set the style" and thereafter the shoemaker had all he could conveniently do.

In Uruguay boot and shoemaking is prosecuted to such an extent as to not alone supply most of the local requirements, but to furnish considerable quantities to neighboring countries.

Very unique sandals are made on a large scale by native workmen in Venezuela and their manufacture forms one of the most important industries of the large cities. The output of one factory in Caracos is twelve hundred pairs of these slippers per day, and the same factory makes boots and shoes. The design and quality of these sandals, or slippers, is peculiar to the country. They have a sole of unusually heavy red leather, with canvas vamp, side strap and heel piece. This canvas is sometimes of variegated colors, but more frequently white is used. The soles of the sandals project a full quarter inch all around and protect the upper from wear and give additional breadth of tread for comfort. The soles are moulded to fit the shank and rounded on the bottom; they are channeled on the inside and the upper is drawn into the channel and fastened by a cord extending the length of the shoe. There is no lining to either the sole or the upper. These sandals are worn without other foot covering, and are particularly well adopted to the mild climate of the country, while the heavy, serviceable soles withstand the hard wear and tear of sand and rocks. A hole in the toe allows water to run out without removing the shoe.

The soldiers of the Venezuela army wear these sandals, with white canvas uppers.

The number of boot and shoe establishments in Buenos Ayres, Argentine Republic, in 1898, was 788, employing twenty-two hundred persons. Most of these establishments produce hand-made custom goods, but several are well equipped with power machinery.

Bogota, the capital of the Republic of Columbia, and other cities of the country, it is said, offer excellent opportunities for the establishment of modern retail shoe stores. The few shoe stores there sell at high prices, a poor grade of boots and shoes made in the cheapest manner. There is one unusual feature about the shoe trade in that country, that is the style seldom, if ever, changes, "Once made, always the same," seems to be the motto, the only difference being in the quality and the low quarter or high shoes and the style of heel.

The form of the shoes used in Panama are high laced and congress boots for men, boys and youths. Ladies and misses use mostly high button boots. Misses and children use spring heels, while adults, both men and women, mostly use low English heels. Oxford, or low, shoes are very little used, while "Faust" slippers are coming into use by people who cannot pay for better shoes. Patent

leather is very little used, glazed kid and calf skin being most in favor and black the shade preferred, although russet is in some demand. Medium and narrow toes are the favorite, and tips are largely used. Laborers on the canal and railroad work buy cheap, laced "plow" shoes. Country people wear few shoes, and when they do they buy the cheap cloth footwear, with soles of twine and rope. As a rule, the native foot in Panama is short and wide, with high instep. Local made shoes are good and for every-day use are mostly called for. The work is cheap and made mostly for women; low slippers are made of light kid or calf leather, without heels to a great extent.

Leaving South America and the Isthmus, let us take a glance at the footwear styles in vogue in the new possessions of the United States—Cuba, Puerto Rico and Philippines—as that is particularly timely just now.

The best people of Puerto Rico generally wear shoes similar to the styles and qualities worn by the better classes in other parts of the United States. They are imported from United States, England or France, or are made in large local shoemaking establishments, which do excellent work. The shoes worn by the poorer classes were formerly imported from Spain. They had a shabby-genteel appearance and their make-up was of the poorest and flimsiest character. The materials, as well as workmanship, were cheap, and although the prices were low, they were out of proportion to the low grade of the goods. The feet of the native Puerto Ricans are short and thick, broad at the ball and comparatively narrow across the toes. The instep high and full.

In Puerto Rico, congress gaiters of calf skin for both men and women are in vogue; button and lace shoes of calf skin and imitation button of the same leather rank next in order. Men's and women's patent leather and quantities of fancy shoes and slippers are in demand for women's and children's wear. Fancy shoes of various kinds and some riding boots, as well as canvas sandals, with rope soles similar to those used in Mexico and South American countries are worn. Low-cut black calf-skin shoes are in some use by both sexes, as well as both high and low-cut russets. As a general thing, the men's calf shoes, which are mostly congress, are made of the poorest material throughout. The upper and sole present the appearance of being glued together, so closely do they meet at the edge; the toes are narrow, blunt and rounded, inclining toward the pointed toe; the heels high and somewhat tapering, and instep high. The russets are laced, but otherwise similar in appearance to the black congress shoes. The women's high shoes are fastened with hooks and many are imitation lace or button. They are common-looking goods, evidently of inferior material. The low



shoes are equally unattractive and the slippers are cheaply made affairs. The "alpargatas" are simply closely woven soles of fibre, with a white or colored canvas upper, roughly stitched on. A very general article of wear among women is a hand-made knitted slipper, elaborately and expensively made of wool and silk. Similar slippers are worn by men for house use.

Every one knows, of course, that feet vary considerably in different countries. Climatic conditions, average size of the race, manners, habits and customs all have influence in regulating size and shape of the feet.

There are some features and peculiarities of the Puerto Rican trade which the manufacturer or exporter should observe to insure success, and to understand this it must be noted that the average Puerto Rican is of short stature, with feet correspondingly short, as well as thick and wide, with a high instep. Consequently, the market requires a broad last, high instep and a shoe roomy and full over the ball of the foot, immediately forward of the instep and extending thus all over the front part of the upper to the toe, or tip. This is applicable to both sexes. Shoes made long and tapering, to give a shapely effect, can rarely be sold. The shoe required is short, wide and very full in the upper, being stubby in appearance, without having the wide toe. Shoes made by the local factories are badly made, of the lowest quality of leather, poorly tanned and of linings, trimmings, etc., still worse. All prices are high, considering the quality received. Some of the higher priced goods are all leather, but the cheaper grade are made with paper soles, covered with a thin layer of leather, and are the faulty putting together of the cheapest materials. Men's congress gaiters are much in use and more popular than the lace or button shoe. There is a market for cheap canvas shoes and for a cheap low-cut patent leather shoe. Lace shoes for women are not so popular as a button, but a shoe fastened on the side with a series of hooks is much in favor. There is a good demand for neat, cheaply made and fancy lines of ladies' and misses' slippers.

A few modern up-to-date shoes would make a good object lesson for the Cubans. Nearly all the women's shoes formerly sold in Havana were awkward looking affairs imported from Spain. They were crudely finished and high in price.

The leather in Cuban-made shoes is badly tanned and of little value. It is impossible that it should be otherwise, as the cattle from which the hides are obtained are poor and almost worthless. The native shoe factories are one-story buildings, badly constructed of brick and plaster, with the whole front open to the street. The workmen, few in number, sit on low benches and do their work leisurely by hand, in a slipshod and unworkmanlike manner. Some



of the men work in the front part of the building and others in the room next to the little court-yard in the rear, but no skilled labor is in evidence anywhere. Most of the factories have a kitchen connected with them, the proprietor boarding his men. Work begins at seven in the morning, the men starting in on a light repast, consisting of a small cup of coffee and a roll. At 10.30 o'clock they have their breakfast and then nothing again until 6 in the evening, when dinner is served. After that, those who have homes go to them and the other sleep where they can on the premises. In addition to the workshop, kitchen and sleeping rooms, in the limited space occupied by the factory, a horse is usually stabled in the small court-yard in close proximity to the kitchen. What a revelation to the full-fledged Cuban shoemaker would be a model Pennsylvania factory, with its perfect sanitary construction and abundance of light, the machinery and ingenious mechanical appliances presided over by hundreds of expert operators, with sound minds and bodies, reflected by cheerful countenances and having comfortable, happy homes to go to after the labor of the day.

It is important to know that Cuban feet are generally short and have a high instep. Those of the women are small and somewhat narrow, but like the men have the Spanish arch. Shoes in general use are Congress and laced shoes, glazed kid and calf skin of both black and russet being the favorite materials. Women's and misses' shoes are button and laced or Congress gaiters imitation button. Laborers in city and country wear cheap and very poorly made shoes, but the article most generally used among them is the sandal, with a hemp rope sole and white cotton duck upper.

Respecting the outlook of the shoe and leather trade in the Philippines. The leather used is of poor quality and the shoes worn have been almost exclusively of local manufacture, very little having been imported up to the time of acquisition by the United States. The supply of shoes under Spanish dominion was drawn from Spain, France, Austria and the local shoemakers mostly Chinese. Owing to the inferior quality of the shoes worn, the consumption is greater than is general in some other sections. The shoe most commonly worn by the natives, consists of a rough wooden sole and heel, with carved leather toe piece attached to the sole with small nails. The toe is open at the end and the shoe is laced with a thong of leather. Natives also wear a slipper without a heel, which is made by the Chinese. The trade is divided into two grades. The better grades are sometimes sold in conjunction with other goods and the inferior grades are found in native and Chinese shops.

With the influx of European population that has followed American conquest and occupancy of the islands and the number of Ameri-

can feet belonging to the army of occupation that will require change from the regulation army shoe, there has naturally arisen quite a demand for American made boots and shoes of the better grades, and footwear similar to that in general use in other parts of the United States will, ere long, be the rule.

### Present-Day American Styles.

Contrasted with shoes of other nations, the American shoe is a thing of beauty and originality. It is not copied after any foreign design. The American shoe manufacturer is an originator. Style after style, improvement upon improvement, new features and new ideas have steadily evolved from the minds of the manufacturers, to give comfort, ease and grace to the feet.

The highest perfection in shoe manufacturing has been attained in the United States, largely owing to the ingenuity and enterprise of mechanical genius, and it should be a source of much national pride that such is the case and that American shoes have become the standard of footwear the world over. A shoe like the American made article can not be had manufactured anywhere outside of the United States. Well-shaped shoes are not made except in this country, and the reason is that there are no operators like the American and no shoe machinery in the world so ingeniously contrived to lessen the labor and reduce the cost of production, at the same time add grace and finish as the American shoe machinery. Operators in other countries may be taught by Americans, it is true, but they some how fail to get the knack of it. An American workman is a genius in every sense of the word; he understands his machine and makes it a part of himself. The average workman abroad cannot easily adapt himself and the shoes he turns out have a crude, clumsy appearance.

American enterprise and ingenuity have brought the products of American labor to the forefront the world over. The skill of the American workman is universally recognized and the reliability of his work accepted, as is shown by the fact that our exports of delicately adjusted and complicated machinery are constantly increasing. Many machines are sent each year to more distant localities, where they would only be acceptable upon the assurance gained by actual experience that they can be relied upon to perform their functions in unfamiliar hands. The markets of the world are being pre-empted by American rivals, the superiority of American goods being clearly recognized.

It is not because of their cheapness alone that American shoes have been favorably received abroad, but because of their style and make-up. There is a heaviness and clumsiness of outline in

the goods made outside the United States that contrasts unfavorably with the sharp, clean-cut, contour of American products.

The importance of a well-fitting shoe is great and cannot be overestimated. The modern American shoe, rightly fitted to the foot, is not only comfortable and sensible, but presents a neat appearance. The foot of the wearer rests solidly and comfortably and is far better adapted for walking than the slipshod sandal or many of the badly shaped specimens we have attempted to describe. Our shoe has several features provided in it so that the pressure in walking is equally distributed over the foot, first by the top, in the lace, button or Congress shoe, next by the instep and the incurving counter for keeping the heel in place, without chafing, and lastly by the ball of the shoe. By a nice adjustment of these various points to meet the requirements of the individual foot, ease, comfort and adaptation unexcelled by foot-covering of ancient or medieval times is assured.

One of the most interesting trade features is the development of changing styles. Changes are no longer radical as of yore, but come about almost imperceptibly to those not actively engaged in the industry, and glide from one to another until a style has become thoroughly established.

A good many people who are not conversant with the inner secret of such matters, no doubt imagine that styles originate solely with the public, and that manufacturers and dealers only cater to the demand after it has been created. To some extent this may be true, but usually quite the contrary is the case. Months before the public has any intimation of it, ingenious manufacturers and dealers are settling the question as to what the style shall be the next season or the following one. Of course, these nicely laid plans as to styles sometimes go amiss, because the public doesn't take to them.

Shoe buyers have a powerful influence in establishing styles too. The expert buyer will examine newest samples displayed by salesmen and critically analyze and inspect the latest things produced by manufacturers, but does not necessarily accept the shoe as per sample. He invariably has such changes made as shall better suit the known taste of his trade and what, in his judgment, will have a tendency to bring out the shoe in detail to the best advantage. He also designates tips and extensions, such as he believes will produce an harmonious shoe.

Any special events out of the ordinary often influence the trend of styles. This was noticeable during the Spanish-American war, which gave a military turn to taste in dressing, and we had the military cape, hat, shoes, etc. Athletic sports gave us the "outing" shoe, and to the popularity of out-door exercises is undoubtedly due



the death of the "razor and needle-toe" shoe in high favor a few years ago, and the universal adoption of comfortable sensible and natural shaped footwear. In fact, it is impossible to associate outdoor sports with narrow-toed or high-heeled shoes.

At one time it must have been almost impossible for women to walk correctly, for they persisted in putting their feet into shoes so narrow, with heels so high, as to throw the body out of position and prevent a graceful carriage. This was changed in time, however, and it became no longer correct to wear high-heeled shoes. In consequence, women who were wise enough to conform to this sensible edict of fashion became healthier and more graceful.

Take, for instance, a ladies' ball slipper of sixty years ago. It is unique and exceedingly interesting. One shown to the writer recently was a turn, strictly hand-made throughout and was exceedingly light. It had fine silk lasting top, silk bound by hand. It was drill lined, with lamb bottom lining. There was a side seam, but no seam at the back. The soles were straight, with square toe and no heel. A long, slender silk lace served as tie over the instep.

Another relic of the past generation is a shoe made in 1832. It is a ladies' hand-sewed, turned shoe and laced at the side. The topping is of the finest serge, with morocco foxing. The toe is square, and the sole is the same width from toe to heel. The chief features of this shoe are the extreme thinness and flexibility of the sole and the peculiar shaped spring-heel, the bottom of the latter being covered externally and on the inside concave to fit the heel of the foot. The eyelets are hand worked and are ten in number on each side of the opening, which extends to within one-half inch of the sole. Altogether, this is as queer a specimen of footwear as any one can imagine, accustomed, as we are, to high-cut, laced or buttoned boots, with their usual accessories of heavy soles and comparatively broad heels. Nevertheless, this shoe possesses a beauty of its own, and there is a character in its lines.

Another specimen which has recently come under the writer's observation, is a woman's hand-made welt, with cloth top and patent calf slipper foxing. It has cone buttons and figured silk lining, and was made on a straight last. It has short gauged heel and is bridge stitched. Although a welt, the sole is as light as a thin edge turn.

One of the most interesting changes in ladies' footwear is not in style but in size. The average size of women's shoes to-day is larger than formerly. One reason is the common sense of present-day mothers, and the favor with which all outdoor sports are received.

No one need be ashamed of having large feet nowadays, for the



big, well-nourished girls hygienically brought up who are to be seen all over the country have large feet in proportion to their well-developed bodies. These sport-enjoying, healthy, freedom-loving women of America may clothe their feet properly, sensibly and comfortably and trudge along mile after mile with ease. It is not necessary for the feet to look clumsy, even though low heels and thick-soled boots are worn. These are made so trimly now that they give a stylish look to the foot and well-fitted and well-chosen are the finishing part of an up-to-date costume. The popular boots fit snugly over the instep. They have rounded toes, glazed kid or patent leather tips, thick soles and comparatively low heels. Either lace or button boots are worn. The more dressy boots are of patent and enamel leather, with kid tops.

As in the case of alteration in styles of toes, so have heels been altered as well. The level-footed sandal was first heightened by raising the back end of the sole. As is usual with new departures, extremes followed in course of time the innovation of heels, as they have in other portions of the shoe. From the rather insignificant rise of a single lift, it attained the height of the French heel of Louis XIV, reaching the limit in the stilt-like Swiss "choppine." At a later period, heels gradually became lower and lower until the common-sense heel was evolved. Now there is a tendency to grow again and although the high tapering little French heel is but little used for street wear, the popular Cuban and military heels elevate the wearer to a considerable height.

The woman who aims that her footwear shall be correct in every particular and entirely up-to-date must have a wardrobe well stocked with various styles of shoes. She should have one or two pairs of heavy shoes for general out-door wear. These walking shoes have heavy soles, low, flat heels, broad, round toes and may have calf skin or kid tops. They may be laced or button, according to her fancy, and the extent of her means will determine whether or not these boots are purchased ready made or are made to measure by a fashionable bootmaker. However, the advent of elegant factory-made shoes on the latest style lasts and from the most approved fashions and designs, renders the ordering of footwear to measure unnecessary. For golfing she wears a sturdy high-cut russet boot, with rubber discs on the soles to prevent slipping, and for pedestrian excursions, country wear or mountain climbing, an extra high-cut boot of heavy black or tan grain leather, with thick extension soles are necessary. If she rides horse-back, a pair of patent leather riding boots which reach almost to the knee are indispensable. They are made just like a man's boot, with neither laces or buttons, and have plain rounded toes with low, flat heels. For receptions, teas and other dressy occasions, there are buttoned shoes, with tops

of fine Dongola and patent or enamel leather vamps and Louis XIV heels. In the evening my lady is resplendent in Oxford ties of patent or enamel leather, or slippers may be made of satin to match her gowns. Handsome kid slippers, either jet embroidered or finished with a large buckle are also among the shoes for evening wear. For rainy days the woman who does not care to be encumbered with heavy shoes has a layer of cork placed between the outsole and insole of her shoe. Rubbers are also made in every style, size and shape of toe. For milady's boudoir are to be found neatly quilted satin or felt bed-room slippers, with fur tops and in every conceivable color. These are appropriate for younger women, while "Old Ladies' Comfort" shoes and slippers in sombre hues are more suitable for women advanced in years.

Although new lasts are being constantly introduced into progressive factories, a glance at the prevailing and probable styles of boots and shoes reveals the fact that so great have been the improvements in the style and finish in footwear during the past few years that the outcome of perfection in this direction seems to have been almost attained. It is cause for but little wonder, therefore, that the standard and staple lines for the coming season will show but little change in style from those of the season just closed. The common sense styles seem to be satisfactory, as there is no radical change demanded in the style of lasts. The popularity of heavy shoes is evidenced by the large quantities sold. For comfort and durability, shoes thus made cannot be excelled. They possess also a neat style, for, although somewhat masculine in appearance, the lines are dainty and graceful. The thick, round-toed laced or buttoned shoes, continue in favor all through the lines. These have extension soles, rope stitched and are made of glazed kid, patent or enamel leather, and some have bright vamps with dull tops. The strictly bull-dog toe, so popular two or three years ago, is, however, no longer in vogue, and although the extension of the sole continues, women's shoes are being made rather lighter and have more of a feminine look. This as regards walking shoes. For carriage or house wear shoes and slippers are light and dainty as could be desired.

The Colonial tie is now very popular for women. It is an imitation of the shoe worn by women in the Revolutionary period, and is a fair representation, following closely the original type. Any modifications made by our manufacturers have tended to render the tie of the present day an improvement over its Colonial contemporary. A conspicuous feature in this shoe is the high, flaring leather tongue, which forms the background for a large buckle. The great variety of beautiful, artistic and tasty goods in this line leaves the most exacting nothing more to be desired.

The latest Colonial tie has somewhat narrower toe than has been the prevailing fashion during the immediate past. These ties are made with one and one-half inch military or "steeple heels" or with one and three-fourth inch Louis heels. The making of these lasts and fitting the shoe over them is a delicate operation, requiring great expertness. The lasts are made with considerable fullness under the ball, so that when being worn the ball of the shoe, instead of the toe, will strike the pavement. The shank is high, so as to carry a high heel. These shoes are exceedingly attractive and when properly made are par-excellence. They are to be much used for out-door wear and lighter varieties of it are being made for indoor use. They are made of glazed kid, dull Dongola, patent or enameled leather. They have plain rounded toes, comparatively narrow, without tips.

Regarding the buckles, their name is legion. Of course, there are the regulation oblong and oval brass and nickeled buckles to be used on patent or enameled leather ties; then a little variety is added by a plaited or twisted brass buckle, round or oval, with two fastening pins instead of one. The elegance of some flat oval brass buckles is further enhanced by rhinestone settings. The most elegant of all is the small oval gold buckle handsomely chased. Among the novelties is the gun metal buckle, which produces a handsome effect upon a Dongola or a Mat kid tie. Leather covered buckles are also used.

The greatest novelties, but not altogether the most tasty, perhaps, are the oval flat steel buckles, with black satin or red plush or velvet as a background, and used on bright red shoes. These ties are sometimes made with laces or buttons under the tongue, or have Colonial front with high tops fastened with buttons or laces. A Colonial tie of dull Dongola with black oxydized buckle, or buckle covered with dull kid is especially suitable for mourning. A patent or enamel leather tie with bow of velvet to match the gown, and heel covered with the same, the bow being topped off with jeweled gold buckle, has rather a "Frenchy" appearance. Another chic affair has a buckle with rhinestone setting and red leather Louis heels. For evening dress, ties are made of shades of Swede to match the gowns. These have gold or silver buckles, the most expensive having jeweled settings.

Almost as many varieties in footwear are shown for men as for women. For general street wear, the heavy calf shoe, with thick, rounded toe, extension edge and low broad heel continues in favor. For more dressy occasions, patent or enamel leather vamps, with glazed kid tops are used, and in summer, all glazed kid uppers in the high shoes, or Oxfords of glazed kid, patent or enameled leather are seen. Sportsmen's hunting boots are of heavy black or russet



grain leather, laced to the knee; they have double soles, with extension edges. The correct shoe for golf is a high-cut laced shoe. It is supplied with a sensible heel and rubber discs attached to the sole to prevent slipping. It has a curved and pointed tip, which extends along the side of the shoe and is bordered with elaborate stitching. The equestrian's footwear is an important part of his apparel, and he gives it no little attention. He may wear top boots of patent or enameled leather, or of russet calf skin. These have stiff legs or have a few wrinkles just above the instep, where leg and foot join. Or he may wear "Tattersalls" or full length leather leggins strapped over a laced, button or Congress shoe, with plain medium toe minus a tip.

Box calf is a leather much used in men's shoes. It is so called because of the figure imprinted on the grain. The figure is made by boarding the grain with a hand board in the finishing; the skin is simply boarded two ways in opposite directions, which gives a figure resembling a box.

The wearing of boots by men for general use, has about disappeared in the cities. The swell of the present day, would look askance at the footgear of his predecessors of a half century ago. The dandy of that day regarded his boots as the most stunning part of his attire, and it was a source of much concern that they should be turned out by the fashionable bootmaker. The broad heel, tapering to the toe, similar to ladies' slippers to-day, which were so stylish years ago would, cause a shudder of horror to men wearing the modish creations of the present.

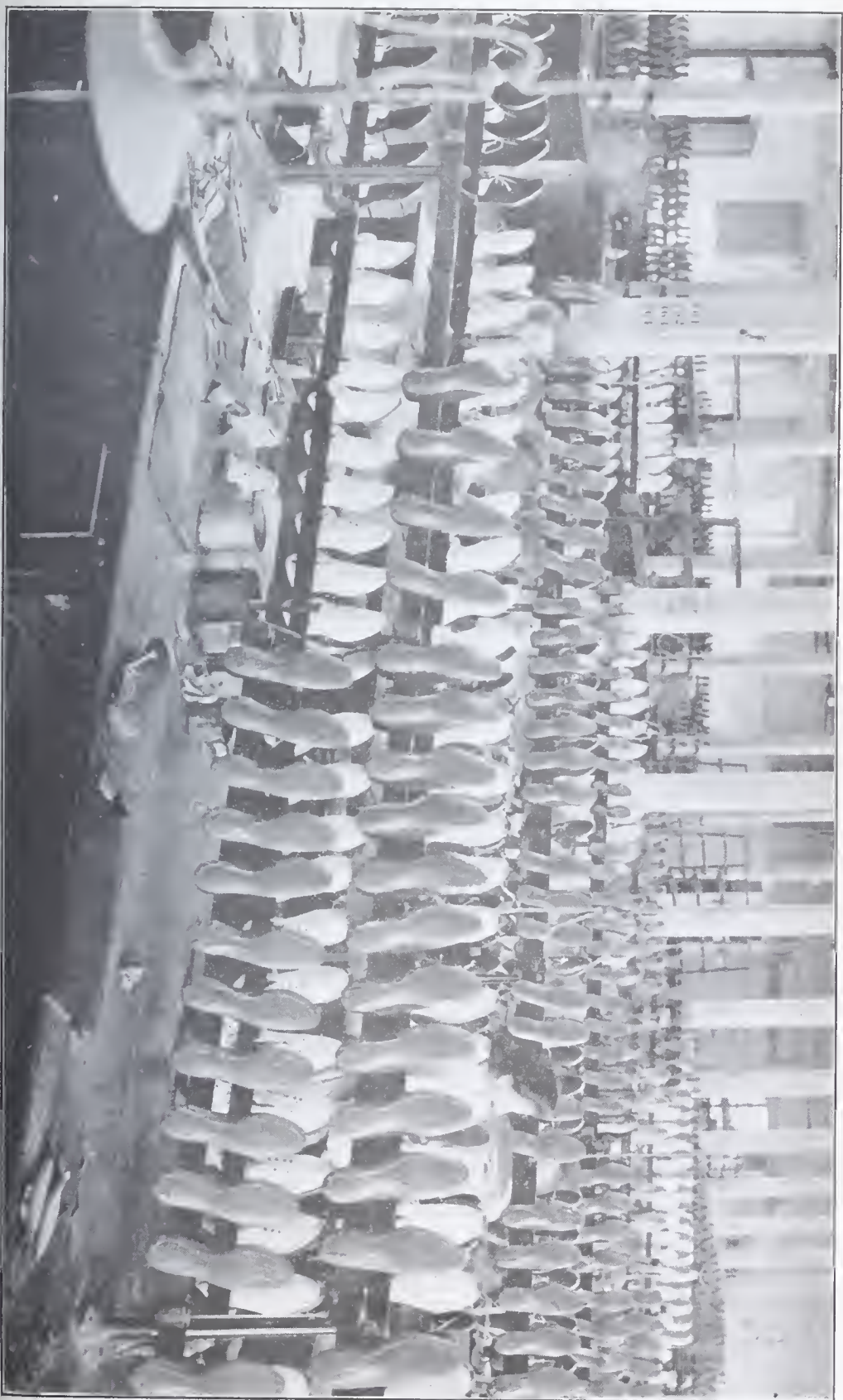
One hundred years ago men of the better class wore low-cut shoes of stout calf skin. The heels were low and broad, the toes square and blunt. A huge buckle adorned the front.

In their way, children's and infant's shoes have received as much care and attention in their making as adults, and the contrast between shoes worn by children of the present and the little ones of long ago, is just as marked as that noticeable among shoes for their elders. Infants' and children's goods, in which the closest attention is paid to the smallest detail, are turned out in vast quantities all over this State, as well as other sections of the country. The clumsy appearance formerly seen in this class of goods is altogether avoided, while the ease and comfort so essential to children's feet is always kept in view.

As was the case with the parents' shoes, and perhaps even to a greater degree, children's shoes during the past generation were very crude compared with those made to-day.

A child's shoe made probably fifty years ago, was shown to the writer recently. It is a hand-made, laced shoe, of veal calf. The only seams in the shoe are one on either side of the vamp. The





SHOE ROOM—PROCESS OF MAKING RUBBER SHOES



counter had been sewed in by hand and the sole was hand-pegged, with diminutive wooden pegs. In order to insure smoothness inside, an extra insole had been inserted and was held in place by a few pegs driven at intervals. The shoe was made on a straight last and had a broad bottom and spring heel.

Little tots now have moccasins, soft-soles and miniature bed-room slippers, exact counterparts of those worn by their elders. Little quilted velvet or silk "bootees" bound with fur or swan's down, "just like mama's" are decidedly cunning.

Taken all in all, the latest American shoe, whether it be for man, woman or child, is a masterpiece of shoemaking art and is rightfully ingratiating itself in the minds of the shoe-wearing population of the world. Civilization is traveling around the world in American-made shoes. The high character of the stock used, combined with the artistic finish and exhibition of taste in the American product, makes our footwear acceptable to all civilized peoples. Clearly in the contest for supremacy along these lines it is American ingenuity and skill against the world.

It is interesting to note just here that the increase in the output of boots and shoes in this country during the ten years ending in June, 1900, was \$39,450,130, with a total product for the year of \$260,189,488. This amount represents the product of factories and does not include custom work, which would increase the total to somewhere near the sum of three hundred millions of dollars.

The aggregate floor space occupied by the shoe factories of this country is practically 24,000,000 square feet, or about 550 acres. The total number of pairs of boots, shoes and slippers of all kinds produced in the factories of the country during the year amounted to 218,529,886 pairs, and after deducting something over 3,000,000 pairs which were exported, and basing the population of the country at 76,000,000, we get an average of a fraction less than three pairs consumed by each person.

The annual capacity of the combined factories of the United States, on a basis of 300 working days, is slightly under 4,000,000 pairs, showing that with all factories running at full capacity 300 days in the year, it would require not exceeding seven months to produce all shoes consumed in the country, including the exports for the year ending June, 1900.

It is gratifying to note that the export of shoes and leather, as shown by Government reports, is increasing rapidly. Figures showing the export of shoes since 1897 are as follows:

1897, .....	\$1,708,224
1898, .....	1,816,538
1899, .....	2,711,385
1900, .....	4,276,656
11 months ending November, 1901, .....	5,580,874

While these figures showing increase in export business are very gratifying, yet the fact remains that had factories run full every day they could have produced in seventh months' time all the shoes consumed in this country, together with those exported for a whole year. But as the reports for the year 1901, without the final month, show that the exports during that year were greater than ever before, and as the domestic consumption has also increased to a great extent, it is reasonable to suppose that the trade is in a fairly prosperous condition, and that the progress made during the past decade will be equalled in the next ten years and the magnitude and importance of the industry greatly increased.

American shoe salesmen are now sent to the most remote parts of the world. India, Japan, China, Australia, New Zealand and South Africa are some of the countries being cultivated by direct solicitation and the increase in exports of boots and shoes to almost double during the past two years, gives unmistakable evidence that their labors are productive of good.

### The Manufacture of Leather.

But how is the leather obtained, from which all this footwear is made, and from whence do the hides and skins come that are tanned into leather.

The art of tanning hides and converting them into leather by the use of tanning is as old as history, but the greatest progress in the art has been made during recent years. Leather is the oldest manufactured article mentioned in history, and, indeed, it antedates all records and traditions. Really, there seems to be no time in the history of this world when leather was not made.

Coming down the ages, it has always played an important part in the commerce of the world.

The first authentic record in human history regarding hides and leather dates back four thousand years. A mass of papyri was discovered near the pyramid of Usertesen 2d, at Illahun, about fifty miles above Cairo and one hundred and seventy-five miles above the mouth of the Nile. In these papyri among a series of temple archives and records of temple administration of the Twelfth Dynasty, about two thousand years before Christ, reference is made to leather and shoemaking.

The earliest mention of leather made in the Bible is 2d Kings, 1:8, "Girt with a girdle of leather about his loins."

In the most ancient ruins of Thebes, which were ruins in prehistoric times, pictures and inscriptions have been unearthed which prove that the ancient Egyptians tanned with the bark and pods of the acacia. These records also show some of the ancient tools



and processes of making leather, as well as leather ropes, water sacks, shields, harps, etc., in use centuries before the Pharaohs ruled. Leather was also tanned by the early Aztecs.

Shakespeare says "A tanner will last for nine years—his hide is so tanned with his trade that he will keep out water a great while."

Tanning is the treatment of hides and skins with tannin or tannic acid, converting them into leather; in other words, the manufacture of leather. In tanning proper, raw, salted and dried hides of cattle are treated with some form of tannin, either by itself or in connection with other agents. The product is called leather to distinguish it from white alum leather, kid, lambskin, etc., produced from the hides of goats, sheep and other small animals.

The treatment of hides is essentially a steeping or soaking in baths formed of extract or tannin. Some twenty or thirty species of bark, pods and berries are known to the craft as containing sufficient tannin for the purpose, and different nations use one or another of them. While a great number of plants yield tanning, the chief sources are the barks of green and white oak or pine; hemlock, birch and beech bark; the wood of Quebracho, Colorado; the powdered leaves and young shoots of the sumac. Nutgalls are also used, as they carry gallic acid with the tannic acid. In addition to the vegetable matters, various chemicals are also used in some tanneries. These include chestnut extracts, extracts of hemlock barks and myrabolams. Canaigre extract is being employed with much advantage in finishing hemlock sole leather. Most vegetable matters contain tannin in greater or less degree, and part with it readily. In Chili an extract of the bark of the "linge," a tree which resembles the oak is used. A new tanning material is taken from the roots of bushes called "tarra," found in Burmah and Assam. It ordinarily yields 33 per cent. of tanning matter. In recent experiments carried on in British India from 50 to 60 per cent. of tannin was extracted. It is claimed this new material is cheaper and better than Quebracho wood. Almost every country supplies some species of tanning extract. Wherever extensive forests cover the land, special industries are growing at their expense. Immense forests of sweet chestnut trees grow in Corsica and probably the most flourishing industry of the island is the extracting of tannic acid from these trees, about 20,000 tons of the wood being now required annually for the 4,000 tons of liquid extract sent away.

Quebracho, which is fast winning favor among American tanners, grows in the greatest abundance in the Argentine and in Paraguay. As an article of export it increases in importance yearly, because its value as an ingredient to mix with other tanning solutions is being more and more recognized. This wood is one of the hardest known, and its density exceeds that of ebony; therefore, tools of a

special quality are necessary, and a considerable outlay for labor is entailed in its handling. Quebracho never rots; it can be used with equal success under water or in the ground, and the older it becomes the harder it gets. When needed for tanning purposes, it is cut in blocks five or six feet long and then sliced by a circular saw, into pieces three inches in thickness. These sections are placed in a machine wherein a steel plate studded with numerous teeth revolves with great rapidity, cutting up the Quebracho into a coarse saw dust, when it is then ready for the tanner's use.

The use of bark in tanning is as ancient as the art itself.

Tanners' bark is the bark of trees containing tannic acid, stripped and prepared for use. The bark is first rossed, which removes the outside shell. It is then ground fine in a bark grinder. The first mill for grinding bark for use in tanning was made in 1689. Tannic acid, or tannin, is a white substance, having a most astringent taste, without bitterness, and is very soluble in water.

It has been proven cheaper to transport hides to the bark region and locate tanneries there in the forest districts than to convey bark to the hide centers.

As is natural, the processes in tanning vary greatly among different nations and in different climates. Some methods are very crude, other comprise the highest uses of machinery, the more extended use of which early in the nineteenth century marks an epoch in the tanning industry. The old-time Saraceus used alum in tanning; the American Indians used the brains of animals, preferably deer.

The Clamuck Tartars tan a waterproof leather from the skin of a sea carp, using sour milk and finishing in a dense smoke.

The Russians produce their peculiar yellow by the use of willow bark, finishing with birch-bark tan, and every Russian tanner has a close communion tannery whose secrets are jealously guarded.

The Laplander converts hides into leather by burying them in a corner of his tent or cabin until the hair becomes loose enough to remove. The unhaired hides are then soaked in a liquor made by boiling for half an hour small pieces of birch bark. On the second or third day the hides are placed in a fresh liquor, similarly prepared and then dried in the open air in the shade.

The preparation of hides and skins and their manufacture into leather is one of the oldest and most important branches of industry in Austria, and large tanneries are scattered throughout the empire, producing sole leather in great quantities.

Horse hide, especially, is tanned in Germany, as well as in Sweden, and heavy greased water proof leather for top boots, etc., is very skilfully tanned in Norway.

Although the tanning of a raw hide is a strictly chemical process, by which the gelatin and fibre of the skin, by the action of tannin,

is compounded into leather, it is somewhat singular that chemistry has done so little for the process during all these years. It has pointed out a few new materials and suggested others, but beyond this nearly all valuable improvements have been in the direction of mechanically shortening the time. The hides are first freed from hair and are fleshed. They are then placed in leeches in a bath consisting of a solution of tannic acid and tanner's bark, the proper strength of the solution to obtain best results being determined by practical experience. The first modern improvement was a substitution of a tincture of the bark or "ooze" for the bark itself.

The great problem has always been to get rid of the "ooze" as fast as spent and fill the hide with fresh and strong. Simple as is the proposition, it is now almost as great a difficulty as at first, and almost all the patents have been discarded for the tanner's old friend and coadjutor, time.

It is a curious fact that some of the tools used by tanners and curriers to-day are similar to those which have been used for ages. It seems as though these appliances have escaped the advance of progress and the evolution of genius. To-day skins are soaked and limed and treated in many particulars with chrome tan, just as they have been in past years with sumac or combination tan.

After skins are removed from the tan liquor, a "slicker" is used for striking out water and shaping the skins. This implement resembles, in a sense, an old-fashioned round-cornered hand chopper, excepting that the blade is longer and the edge is flat. It has been used for that purpose from time immemorial.

When skins are removed from the lime, they are taken to the beam house, where they are unhaired and trimmed. The beam of to-day is identical with that which has been in use for decades, excepting that some beams are now covered with sheet metal.

Curriers' knives, used for taking dirt out of skins and for breaking and softening skins after soaking and also for unhairing, are the same to-day as they were when tanning first became a recognized industry. Staking machines, which are used after skins have been tanned, for pulling out and softening the leather to make it pliable, and to extract the seasoning prior to glazing, have not been changed during the past fifteen years at least. Some tanners use hand-stakes and others machine. The so-called hand-stake, requires the united work of hands and knee. The cost of this method is said to be one-third more than machine work.

Now with fleshing machines it is different. These have been so improved upon as to double their former capacity during the past ten years. Putting-out machines, which were invented fifteen or sixteen years ago, have made rapid strides in improvement. Although first made of wood they are now constructed of iron, and one



machine will serve as substitute for three men—that is, in morocco work.

The chrome process, which is composed entirely of chemicals, gives insoluble fixation, but the assurance of good leather is mainly in the treatment of skins before and after the application of the chrome. The mechanical manipulation to which much attention is now given in the dressing of skins, cuts a very large figure in the production of a satisfactory article. Physical characteristics, such as flexibility, tensile strength, color and durability, are more or less the result of processes which follow the chemical process and are included in the various operations of currying and dressing. Pains have been taken by successful tanners to keep pace with modern improvements in appliances of their craft, and in substituting machinery for hand labor wherever practicable. In making chrome leather, bichromate of potassa solution is used as a steep, the bichromate being by reaction with hyposulphate of soda, subsequently reduced in the tissue to sesquioxide of chromium. This is the process employed in the tanning of goat skins from which is made morocco leather or chrome kid, so popular to-day.

Morocco leather or glazed kid for many years had an uphill pull for equality with other leathers, and it was not until ten or twelve years ago that it gained supremacy over them, and leather for uppers for shoes have appeared and disappeared in this country in the following chronological order: First, it was Pebble and Brush kid, then Dongola, and finally morocco or glazed kid. The morocco or glazed kid industry is supposed to be one thousand years old, having originated with the Armenians, in Morocco, from which it derived its name. Its history in this country dates from about 1807. The industry at that time was an unimportant business, but there has been a gradual development to the present time.

In 1867 a Quaker City firm received the highest prize for Pebble and Brush kid leather at the Paris Exposition. This was the forerunner of the popularity that American leather achieved in France after that date, for we find the morocco men of that period turning their attention from Pebbled and Brush kid to something in the order of French kid, the popular leather of France at that period. The trade wanted something different, however, and experiments on a large scale began, which culminated in the production of Dongola. Then came the experiments in 1885 with tanning extracts, which resulted in the production of Glazed kid.

Enormous quantities of goatskins are consumed every year in the manufacture of leather for footwear. Almost every country on the globe contributing its quota. The best specimens came from South America, and are termed Brazils. Patna skins, from India, are more largely imported, perhaps, than any other variety, with the possible



exception of Mochas, which came from Arabia, and the smallest number of skins come from the Rocky Mountain region of the United States, but the newly acquired territories, the West Indies and Manila, contribute to the supply of American goat skins. The United States, in some parts, is adapted to the propagation of goats; indeed, there is scarcely a state in the Union where some breeds of goats might not be raised advantageously, if properly cared for. Almost every region of the west and southwest possess the peculiar requisites for attaining the best results in raising Angora goats, and this breed is securing a foothold in these sections. Angoras are a cross between sheep and goats, and are covered with long hair. The mohair, or wool, is valuable for weaving braids, etc., and the flesh is said to be palatable and savory as food, and from South Africa are brought Natal goat skins, Capes, Angoras and Kaffirs. The many varieties of goats differ from each other in color and length of hair, and in shape of the horns. They seem to flourish, thrive and propagate freely in almost every climate, and many European countries possess more than one variety. In a state of nature the goat frequents the hills and mountainous places, being naturally adapted to rocks and dry soil, and has a decided preference for elevated situations. But it must not be supposed that it will not thrive in low lands. In some countries the goats run wild, while in others they are herded. In Russia, the peasants domesticate them for food; in Arabia, they are herded by shepherds, who raise them for their milk and flesh. Goats are quite prolific, breeding two or three times a year, and generally produce two or three kids in a litter. The Springbok of South Africa runs wild and has to be shot to be captured; shooting the animal, however, produces shot holes and spoils what would otherwise be an exceedingly fine skin.

In preparing the skins for the market great care has to be taken in curing, in order to prevent decay and infestation with bugs. Various preventative measures are used, different countries using different methods. The Patna skins of goats from Calcutta and India are cured with schluam, a native clay, containing quantities of lime. The lime acts as a disinfectant, destroys bugs and preserves the skins. The Chinese skins are cured with mud, while in Batavia, Dutch East Indies, arsenic is used.

Great improvement has been made in the curing process during the last ten or twelve years. The custom was to dip the goat skins in a vat of liquid poison and then hang them out to dry. This was a tedious process, and it took a long time to thoroughly dry the skins, and they could not be packed while damp. Moreover, the vats were not always available.

A preparation called naphthalene is now used. It is a dry flake

powder, and when it is sprinkled into the skins they may be baled at once. It saves labor and time, and does not injure the skins as liquid poison does. The Russians use naphthalene.

Countries differ in the manner of baling as well as of curing. The Indian skins are encased in jute bagging, the Arabians wrap them in matting and the Chinese roll their skins in burlap and confine them with iron bands. The other countries use rope to confine the bales. The heavy goat skins are used for making men's heavy glazed kid shoes, while from the lighter stock ladies' and children's shoes are manufactured.

Kangaroo skins are also used for making a superior quality of patent and enameled leather, from which fine shoes for men and slippers for women are made. Kangaroo skins come from Austria and New Zealand, where the animals are found in great numbers and are hunted by men who make a business of it. The skins, which are dried and baled before being shipped, vary in size from three to ten square feet.

Giraffe hides which, in the mature animals, reach great thickness, are largely sought for by natives of equatorial countries, who fashion sandals, shields, whips, etc., from them. In Central Africa the hides of antelopes, harte-beests and zebras are made into leather for use in high-class bootmaking. Horse hides and colt skins are largely used for making enameled leather. Russia and South America are the greatest markets for horse hides and colt skins. Enameled leather is tanned in the usual way, except that it is put through a special process of grease extracting, and afterwards varnished with a specially prepared enamel.

Were authentic statistics available, they would show the quantities of hides of animals, cattle, goats, sheep, horses, kangaroos, etc., required to provide shoes for one year for the entire population of the earth to be enormous. Not a particle of goat skin or cow hide at the tanneries is wasted. Trimmings from the skins are carefully collected and used, with other refuse, in the manufacture of glue. The hair, which was formerly wasted, is now carefully accumulated, and forms an important factor in the commercial world, being used to pack horse collars and saddles, for mixing plaster, etc. Horns and hoofs are polished and either died out by buttonmakers or used for various little nick-nacks and fancy articles. Moreover, the excrement from morocco factories is valuable as fertilizer, good results having been obtained with it by trials recently made.

An enormous capital is invested in the leather industry in Pennsylvania. Philadelphia is the glazed kid producing city "par excellence" of the world. Many thousand of dozens are turned out daily. The production of morocco is so immense that it not only suffices for domestic needs, but there is considerable exported as





NO. 4. MAKING ROOM.





well. American chrome kid is rapidly and steadily supplanting foreign leathers, and is being shipped to England, France, Germany, South America and Australia.

It is interesting to note just here that the increase in the leather output of the country during the ten years ending in June, 1900, was \$32,974,790, making a total product for the year ending June, 1900, of \$204,038,127.

But when was the making of leather shoes first introduced as an industry into this country?

### Shoe Manufacturing in Pennsylvania.

Shoe manufacturing in the New World has its origin in Massachusetts, and that trade has long been of recognized importance in the east. The first shoe factory in this country, located in Danvers, Mass., is said to be still standing. It is a one and a half story building, with an old-fashioned peaked roof, and was used as a residence as well as a factory. The industry was an important one in Massachusetts almost from the first settlement in the State. It started as a necessity, gradually developing as a leading industry. The business was conducted by the families of the sailors, who fished in summer and in the winter made shoes. All ages and both sexes were employed in the industry. The men took to their homes so many pairs of shoes to peg and their wives and families did the necessary sewing.

There were no regular factories, but the leather was taken from the manufacturers to the homes of the sailor or farmer and there turned into shoes. In the fall the manufacturer would go to New York and buy their sole leather and the whole village would be employed all winter making shoes.

While most of the sole leather was bought in New York, the majority of the upper leather was tanned near home, Salem and Peabody being great centers. The principal hides were from South America and were made into Wax and Kip stock. Hemlock bark was plentiful near home and the old-fashioned cog wheels and a stone were used. Some used horse power, some water power and a few steam. A vat was built in the ground, into which layers of tan bark and hides were placed. The time was noted and after a certain period the hides were taken out and split by the old hand method. They were then replaced in the vat, in order to tan the center sufficiently. Acres upon acres of land were used for the tanneries and the traces of many of the old vats are still said to be seen around Peabody.

The shoes made were heavy brogans, and boots for the southern

trade. They were at that time pegged and in due course obtained a reputation for superiority of workmanship. The shoes were packed in barrels and shipped, some by sailing vessels and some over the turnpike roads to Baltimore.

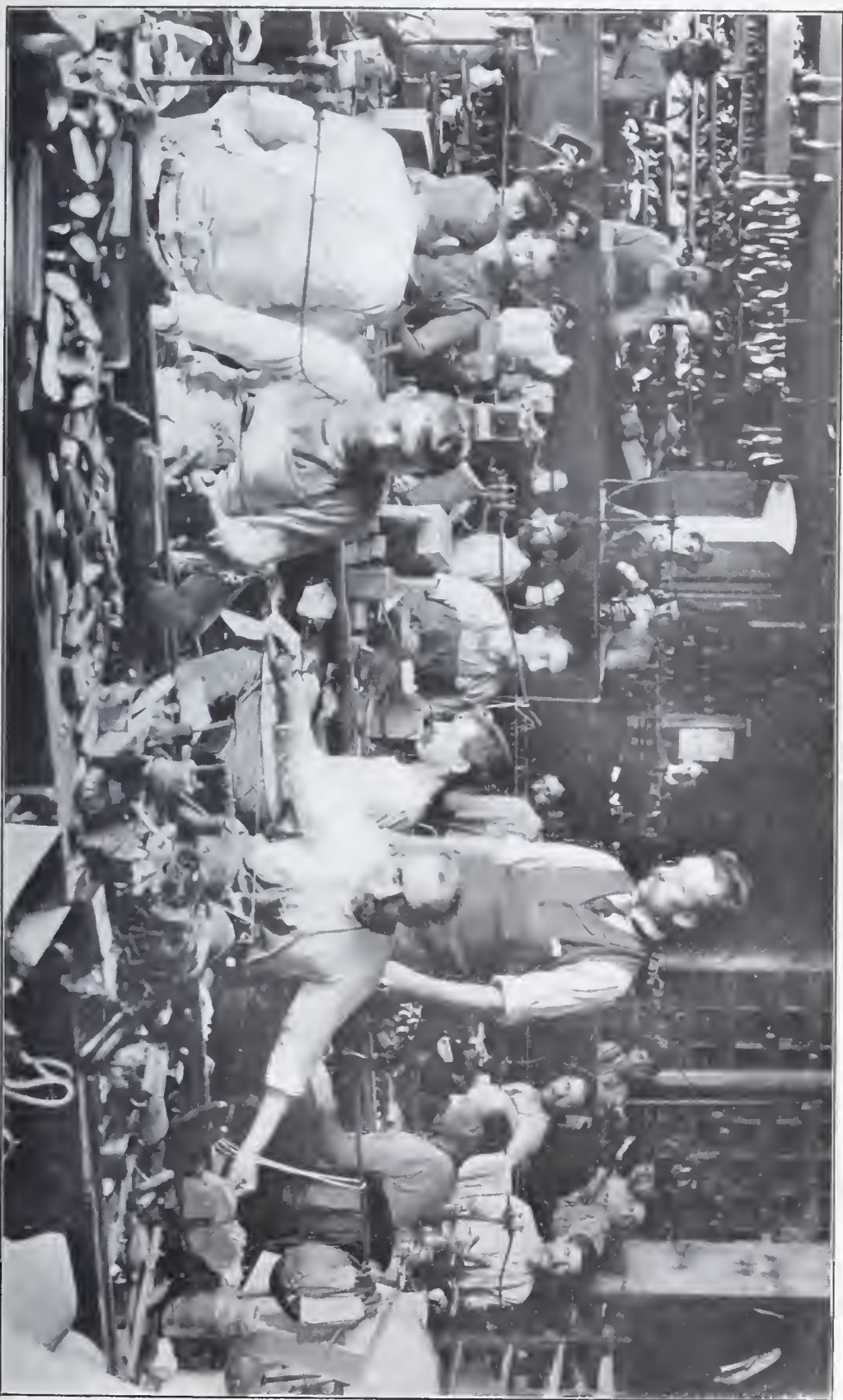
No special skill was developed until the settlement in Massachusetts in 1750 of a Welsh shoemaker named John Adam Dogyr. By superior workmanship he acquired great fame in the trade and materially improved the character of work in that region.

During the Revolutionary War, Massachusetts supplied great quantities of shoes for the army, but soon after its close, the business was seriously checked by importations. In Lynn, however, it revived so that, in 1788, its exports of various shoes were 100,000 pairs. In 1795, 200 master workmen, beside 600 journeymen and apprentices were employed there, and about 300,000 pairs of shoes were sent away, chiefly to southern markets.

The story of the rise of the Yankee shoemaker is an interesting feature of only Colonial development. A great race of shoemakers early sprang into existence in New England and in little more than a century, these hardy American pioneers were leading the world with rapid strides toward perfection in the art of shoemaking.

But what of our own State? Pennsylvania, as a state, is fast taking her place near the head of the column as a manufacturing center for footwear. In the whole record of industrial development during the past few years, there has been no feature more striking and significant than the progress of the shoemaking industry. In the matter of shoe factories there has been a notable increase during the past few years, and in no other section of the country is the business of producing footwear in a healthier condition than it is in Pennsylvania. With very few exceptions the factories have been running steadily for months past, and in many instances large additions to plants and extensive improvements have been made in the way of adding new machinery and otherwise extending and perfecting the facilities for production.

The growth of the industry during the past twenty-five years in Pennsylvania has been remarkable. A generation ago the Pennsylvania manufacturer who produced five hundred pairs of shoes a day would have been considered a marvel as "cock robin" shops, or very small factories in which shoemaking was carried on, on the most limited scale were the rule. The contrast presented between those days of limited output and present-day conditions is a striking one and reflects the utmost credit upon the Pennsylvania shoe manufacturers. When we consider the vast and splendidly equipped factories to be found in many parts of the State at the present time, with their output, in some cases, averaging from two to four thousand pairs per day, we obtain a realizing sense of the difficul-



No. 3. HAND STITCHING.







ties it was necessary to overcome in order to place the manufacture of shoes in Pennsylvania upon its present plane. It required pluck, energy, foresight and business ability of the highest type to bring about the result, and it redounds to the credit of the Pennsylvania shoe manufacturers as a body that they have succeeded so admirably. True, many of the conditions environing the shoe manufacturers were favorable. They had at their very doors a vast territory thickly populated and settled for the most part with a class of people in fairly prosperous circumstances—people who, when they found that good footwear at moderate prices was being produced within the borders of their own State, did not hesitate to become liberal purchasers. A great number of retail shoe dealers are doing business in the State of Pennsylvania and combined with the sister State of New York the aggregate number of shoe retailers in both States is enormous. The Pennsylvania shoe manufacturer is thus enabled to dispose of his output at home and in immediately adjacent territory, and has the decided advantage of near-by freight rates and greatly lessened transportation expenses, which, in these days, when footwear prices are reduced to a minimum, means much. But taken all in all, the Pennsylvania manufacturer owes his prominence to-day to the fact that whether he operates on a large or small scale, his product is a good one, and will stand comparison with any. Adherence through the years, to a high standard in manufacture, and a fixed determination to give only solid value in his footwear has brought deserved success. Most lines made in the Keystone State have an individuality all their own, and wherever shown, the Pennsylvania shoe is invariably admitted to be an "honest shoe." If the ratio which the past few years has shown in the increasing number of factories is continued, Pennsylvania, as a shoe manufacturing State, will be among the first.

The greatly increasing number of employes, with the enlarged productive capacity of the factories, many of which are equipped with the most modern machinery, justifies the claim that the Keystone State is an important factor in this industry.

No one without personal observation and knowledge could believe that so many shoes of various kinds are made in small country towns scattered through the State. And all of them seem to be busy the year round, with comparatively little, if any, shut down. Running all the time is obviously more profitable and economical than running part of the time at even a double production. The amount of rental is no more and other fixed expenses which might be enumerated, are the same whether the machinery runs all or only part of the time. In Pennsylvania, rents are reasonable, labor is plentiful at fair wages, and it is a well-known fact that natives

of central Pennsylvania are not easily induced to strike or enter into labor troubles.

All kinds of shoes, from infant's kacks to men's brogans, lumbermen's and loggers' shoes, thigh boots and the like are made within her borders. She has always held an important place in the manufacture of army shoes. Pennsylvania manufacturers have supplied a very large percentage of the army shoes for several years past and are still making on Government contracts.

Women's, misses' and children's shoes form a considerable factor in this very important industry and the aggregate output of footwear from the Keystone State is enormous.

Years ago the cobbler shops supplied all the wants of the immediate neighborhood. When you wanted a pair of boots you had to go to the maker and have your measure taken; then, if he had no lasts of your size, he would make them. They made their own pegs by hands, and itinerant shoemakers went from house to house to make and repair shoes for the whole family. Subsequently, the trade was wrested from the neighborhood shoemaker, and the factory system began to grow and to fill the place of shoemaker shops of old.

Twenty-five years ago a traveler could travel mile after mile over this State without stopping at a shoe factory. Up to the year 1872, outside of Philadelphia, Allentown and Pittsburg there were few shoes made in the State except an inconsiderable number manufactured in small shops in Harrisburg, Huntingdon, York, Reading and Williamsport. Now, almost every town has its factory of greater or lesser dimensions and almost every week is chronicled the establishment of some new firm. Some factories manufacture in one plant, men's, boys' and youths' shoes; others manufacture womens', misses' and children's. The manufacture of infants' and children's turns forms an important branch of the State's industry. Formerly you could find factories making all kinds of shoes from a child's to men's heavy boots, and often men's high-legged boots. This same custom is noticeable in foreign factories to-day.

Now, however, in Pennsylvania, each factory has its specialty and every individual operator his special part, in which he becomes expert. It is attention to the very small matters that give high class factories the reputation they have of making nothing but the best, and it is this characteristic thoroughness which has given the Pennsylvania shoe its individuality and high standard of excellence.

A little more than half a century ago machine shoes were not thought of and a factory system was then a long way in the future. A shoe factory of sixty years ago was only a place for cutting



No. 1. CUTTING ROOM.





uppers and soles, giving out the uppers to fit ready for the maker and the uppers and soles to be lasted.

About 1860 some manufacturers began making shoes by machinery. This was the transition period of shoemaking from hand work to machine work. Gradually hand-made goods were dropped and buildings for manufacturing shoes by machinery were erected. From crude beginnings arose the gigantic industrial establishments for the manufacture of footwear so numerous in the Keystone State to-day.

The production of certain kinds of shoes gravitated to certain localities. Operators became accustomed to making a certain kind of shoes, acquired dexterity and, of course, did better on that than on some other.

While some of our factories supply local demands, many have distant trade and the names of some of these manufacturers are familiar throughout the United States and their shoes are known all over the world.

### The Building of a Shoe.

An interesting and instructive lesson may be learned by watching the manufacture of a shoe from the sorting of the stock to the final packing and shipping. In the perfectly equipped factory, containing all the modern and up-to-date mechanical appliances for shoemaking, and presided over by experts in their particular branches, each stage of the manufacturing occupies but a comparatively few minutes.

As shoe manufacturing methods are much alike in most factories a description of one will convey a fairly clear idea of the working of all.

The stock room is a very important department of a shoe factory. Here the stock is measured and re-sorted, the object being to select suitable stock to cut to the best advantage according to the character of shoes desired.

The skins are then passed to the cutters, who dextrously cut with a sharp knife, with the aid of a pattern, the various parts of the upper. Care must be exercised to avoid waste and to not cut any damaged part of the skin into any part of a shoe. The patterns used by the cutters are of pasteboard, brass bound to prevent cutting away the edges. The cutters cut the vamp linings and vamps, the quarter, button fly, tips, foxing and the like, as well as stays, trimmings, top facings, etc., after which the linings are stamped by machine with case and size numbers.

Pattern making has become a fine art and to the skill of the pattern maker is attributed much of the success in creating attractive styles.

An ingenious machine folds over the edges of the upper in order to make a beaded edge and operators in the stitching or fitting room, where the inside and the outside of the shoe come together, put the various parts of the uppers together and attach the linings. Each operator has her special branch of the work; one sews in the facings, another the tips, another the button fly and still another stitches the vamp to the upper.

Cotton drills for linings are woven in the south and finished in Philadelphia. Bleaching is done largely in the east.

An eyeletting or punching machine punches the lace holes and sets the eyelets; a stud lacing machine sets the lacing studs or hooks. Shoe eyelets are made of brass by machines, whose operation is almost entirely automatic.

A button-hole machine, cuts button holes, works them and finishes the button-hole at one setting; a button sewing machine attaches the buttons to the uppers.

The button sewing machine is an ingenious labor saving contrivance. Buttons are placed in a hopper, and are automatically fed down a race way to the sewing device which attaches them to the shoe.

A barring or tacking machine tacks together the parts of the upper, holding them accurately in position while the vamp is being stitched. A lacing holds the shoe in proper position so that a standard measurement shall be maintained in a laced as well as in a buttoned shoe.

In the meanwhile the soles are being prepared to meet the uppers. Leather is brought into the stock room in sides or backs. It is first stripped in a stripping machine into the proper widths to allow for the length of sole it is desired to make. A "blocking out" machine blocks the strips with rapidly descending knives into pieces the desired size and shape for the soles. Dies are also used. Here all are sorted into different thicknesses and qualities and afterward selected to suit the special character of shoe being made; a splitting machine or sole evener makes then a uniform thickness. A rounding or sole cutting machine, cuts the sole in exact shape for the different shape of lasts or style of shoes desired.

The manufacturer of cutting dies, by the way, is an interesting process, although apparently simple to those engaged in the calling.

For McKay work, a channeling machine provides a channel on the grain side of the soles, enabling the sewer to put in the stitches and afterward to cover them up out of sight. At this point a slip-sole is added if one is required.

The soles are then moulded in a powerful moulding machine, which gives the sole the proper contour to fit the last. The channels are then opened and turned back out of the way of the sewing ma-



No. 2. LASTING ROOM.





chine. The inner soles are suitably prepared in a rounding machine, which cuts them the proper shape for the sole; the feather-edging machine feathers the edge, putting it in proper condition so as not to cut the upper, and to make a neater appearance on the edges.

Soles for Goodyear welts, upon being taken from the blocker, are put into proper temper, selected and sorted and put through the sole-evening machine the same as those for McKay sewed work. Goodyear soles are channeled, but on the reverse side from that of the sole for the McKay. The leather stiffenings are cut out with dies of different sizes and shapes as required. A sciving machine scives them to the proper thickness, a moulding machine having produced the desired shape.

In preparing sole stock for turned shoes, soles are taken from blocking machine to the rounder, which rounds them up to the proper shape of the last. The sole is then tacked on to the last, flesh side up. The upper is placed on the last inside out and lasted, usually by hand. The Goodyear turn machine sews the sole to the upper. The last is then taken out of the shoe and the shoe turned right side out, the last being replaced. After being laced or buttoned, the shoe is properly dressed and leveled. From this point the turned shoe takes practically the same course of making and finishing as McKay or welt shoes.

Single thicknesses of leather are cut out the shape and styles desired for heels. This dieing may be done by hand or machine. The single pieces are assembled and put one on top of another until the desired height is attained; a machine, which compresses the heels under severe pressure, makes the heel solid.

The various parts forming the sole or bottom of the shoe meet the uppers at this juncture in the lasting department. Here the uppers are pulled over the last and the soles are put to them by the aid of a very ingenious and highly improved machine.

It may be interesting to note here that the manufacture of lasts has attained great perfection. Of the thousand and one details entering into the art of shoemaking, be it of the daintiest slipper or the commonest brogan, there is nothing which can make or mar it more quickly or more decidedly than the last. Many other portions of the work may be slighted or of poor quality and still the goods will sell. On the other hand, be the material and workmanship of the best, a poorly-made and ill-fitting last will condemn the shoes beyond all possible hope. In preparing lasts, a model from which to turn the lasts is made. It is of wood and is nailed all along the edges with gimp tacks, to prevent rounding off at the edges. Sole patterns, in sizes and half sizes, are also made to fit the bottom of the lasts. A flat metal pattern from sizes are

graded up and down on a machine for that purpose is cut and placed on the model.

Last blocks, which are made of hard persimmon or rock maple, thoroughly seasoned, are cut from logs and split. These are kiln or air dried, the former taking about six or eight weeks, the latter requiring several years to accomplish. Blocks are sawed the required length, allowing a couple sizes too long for a nubbin on each end, and then put on the lathe and turned according to the model. A frame moves forward and backward, slowly turning the block of wood, which is to be made into a last, according to the heights and depressions of the model and whirling knives carve the block in exact conformity with the model. After sawing off the "nubbins," a block is sawed out, taking instep and part of ball, so that this block may be removed when shoe is lasted. Lasts for McKay work have iron bottom plates; those for welts and turns generally have heel plates.

After being lasted, the McKay work is sewed—the soles to the upper—on the McKay sewing machine. The fair-stitch machine produces the stitching around the edge of the sole. The channel or cover being laid down, a leveling machine, working automatically, makes the outside or bottom of the shoe as well as the insole level or smooth.

After shoes are lasted on equally ingenious machines, as those used for McKay work, welt shoes are taken to welt stitching or inseaming machine which sews the insole upper and welt together, forming a seam practically the same as the hand method, but more regular and unvarying than hand work. In welt sewing, a thread passed through a heated wax pot; the welting is fed from a roll.

A history of the manufacture of threads used in shoemaking, makes an interesting story, but not altogether within the province of this article.

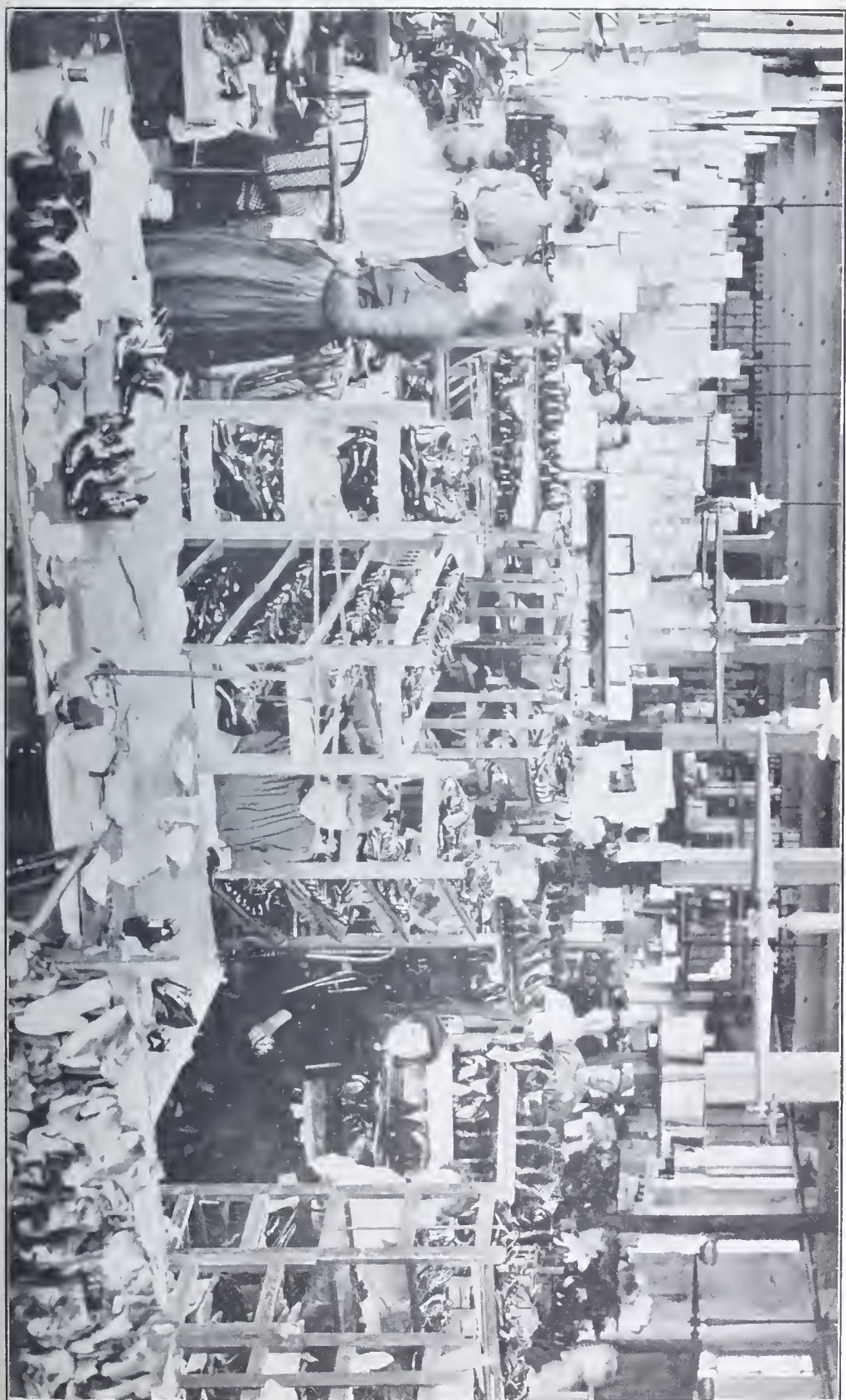
Welting is cut into long narrow strips from the length of a side of leather, after shoulders are cut off. It varies in width and in substance. The welt beater hammers the welt flat and close.

After the bottom filling has been inserted, soles are laid on and held there by adhesive cement, after which the rough rounding machine turns the sole to the shape of the last.

The channel opener opens the channel and turns it back, keeping it out of the way of the stitcher, which stitches the outersole to the welt forming the bottom of the shoe.

The leveling machine, working automatically, makes the bottoms perfectly smooth and to conform with the shape of the last, upon which shoe was made. One shoe is in press while another is being operated upon. A rolling pressure continues to roll over the shoe from heel to toe and again from toe to heel, until the last coming to the front stops automatically.





NO. 5. CLEANING AND PACKING.



At this juncture both the McKay and the Goodyear welt shoes go to the heeler where heels are attached. The shoe, minus a heel, is inserted in heeling machine. One stroke of a row of pointed awls drills the holes, the second sets the nails, the third fixes the top pieces on ends of nails sticking up.

A breasting machine cuts down the breast of the heel and a heel trimmer forms the heel into proper shape to suit the prevailing fads and fancies. The sand-papering machine smooths up the heel ready for the blacking. The stitch separator makes the milling around the edge of the sole and trimmer turns up the edges, which are then blackened or put in color. An edge setter afterward sets or burnishes the edges. The heel finishing machine polishes and finishes the heel, another machine sandpapers or smooths off the surface of sole and top of heel. A final sandpapering enables bottom finisher to stain and finish the bottom in various styles and shades, as may be required.

After a final cleaning to remove all stains and finger marks, the shoe is treed and the upper treated by ironing process, which restores stock to its original lustre. Shoes are then matched up and mated, and after being finally laced or buttoned they are packed in cartoons ready for the market.

In passing, it might be interesting to note that shoe laces are made not only in enormous numbers, but also in great variety. There are factories devoted solely to their production. Laces are made principally of cotton, but also of calfskin, porpoise hide, silk and mohair. In shape shoe laces are made in a solid round braid, of cord twisted like a rope, or flat braid and of tubular braid. These are all made in various styles and lengths. In colors they are made to match the various shades of leather used in shoes. Many laces are made with the metal tips of the kind that are clamped on, others have spiral wire tips. Formerly many millions of laces annually consumed in this country were imported, chiefly from Germany; the importation of shoe strings now, however, has practically ceased.

The manufacture of paper shoe cartoons has become an important industry too, and presents a very interesting spectacle to an observer who watches the construction through the various stages, but paper box manufacturing is another story.

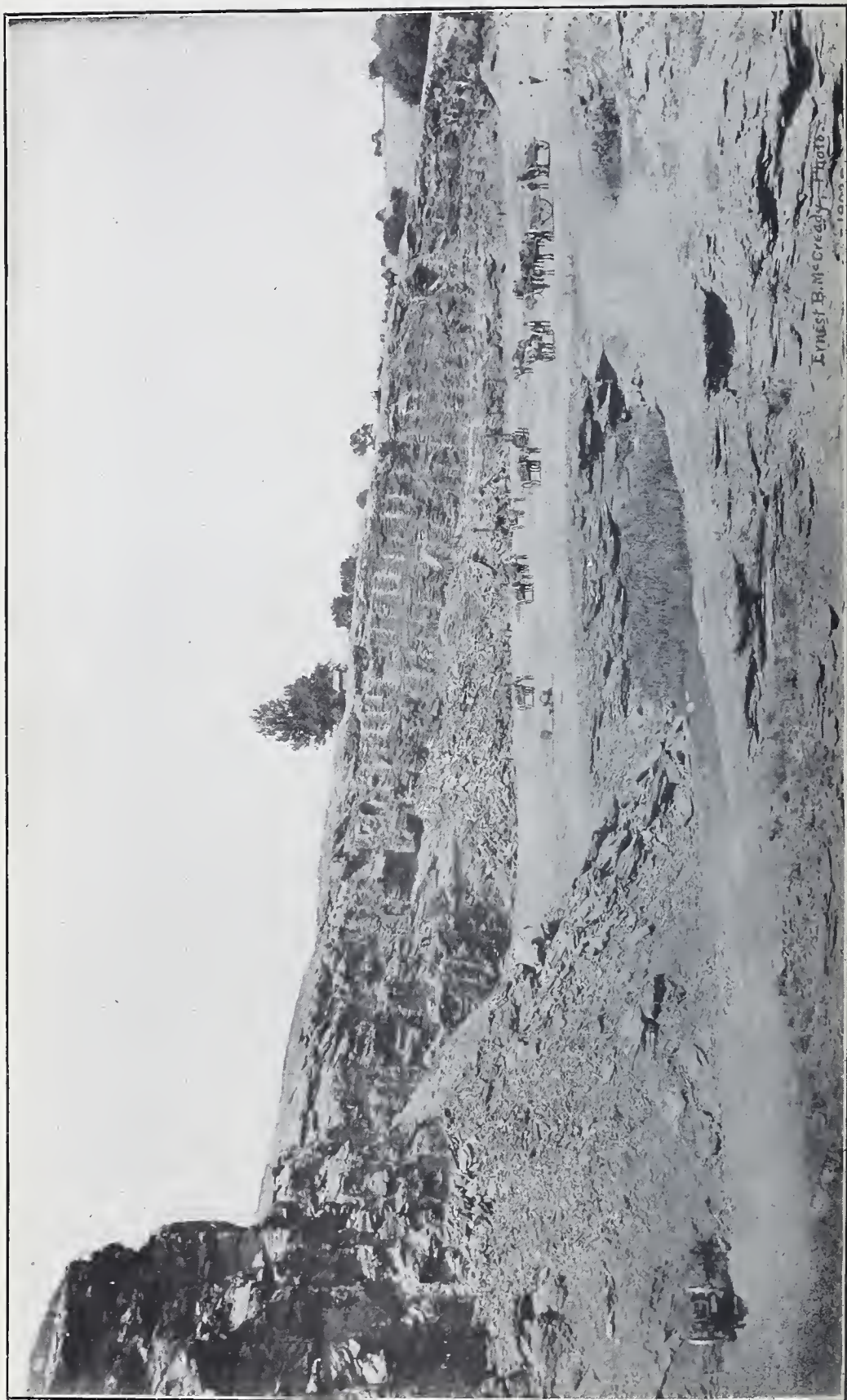
And thus finishes the story of the shoe, from its earliest inception to the present day. It may readily be seen that the building of a shoe entails a vast amount of detail, numerous hands and quantities of machinery. Every portion must be accurate and correct in order to insure a perfect whole, and while some branches of the manufacture are trades in themselves, every part is connected with every other part and is co-existent with it.

—Contributed by Charles Warren Summerfield.









Ernest B. McCready Photo

1903



## Portland and Other Cements.\*

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Mineral resources have fixed Pennsylvania's position with reference to the other Commonwealths forming our greater country. Coal, iron, steel, limestone and clays are among the principal elements of industry growing from the wealth which God has concealed in the hills and valleys of our great State.

Within the past decade another industry has been making giant strides in this country, but more especially in our own State. This is the production of Portland cement, which for many years had been considered an exotic plant and one incapable of establishment in the United States. This industry, which owes its successful development to the perseverance, patience and energy of a Pennsylvanian, finds its principal habitation and source in the State of Pennsylvania, and more than one-half of the total amount produced in the United States last year of this important building material was produced within the confines of this Commonwealth. In writing, therefore, of the growth, development and future of the Portland cement industry in the United States, it is impossible to write it without reference to what has been done in our own State, for the growth of the American manufacture is synonymous with that of Pennsylvania.

History.—From the earliest days of the ancients the desirability of a cementitious material that would set under water was recognized, and in the books of Vitruvius, who wrote of the structural material of the ancients, much stress is laid on the necessity in some of his coffer-dam constructions of allowing the material in the coffer-dam to remain exposed for at least two months, in order that the cementing material used in his foundations might have time to set. This difficulty was one that was met by him, as well as by many of the other builders of that time, and goes to show that what is known at this time as "Roman" cement, and what we, of this period, are prone to talk of as the all-enduring "Roman cement," was not a cement at all, but merely a mixture of lime and argillaceous material, which, after considerable time, set under water.

The mortars of the ancients which we find to-day still standing

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\* Pennsylvania Production for 1901, will be found on the closing pages of this book.

are mostly mortars which have been used in air, and by analysis are shown to have been formed of combinations of slaked lime and powders made by crushing and pounding up the volcanic deposits found in the vicinity of Naples and other points in Southern Italy. These mortars, by reason of the silicious character of the volcanic sand used, had the power of ultimately hardening under water, and the mortar which we see at this day and which seems to have such great strength, was nothing but a form of our old lime mortar, but made with a material a little more suitable in character than the sharp sand we use at this day.

Pliny, also, in describing in one of his works some of the buildings he ran across in olden Rome, finds cases where the walls of the city had fallen and which he says were frequently composed of lime lacking in adhesiveness. His experience only corroborates that of Vitruvius, and shows that the ancient Romans, notwithstanding all the credit we give their Roman cement, really were no better off than those who, in the early part of this century, were using lime mortar as the safest and only material for the binding together of brick and stone.

From the time of the Romans away down until the end of the fifteenth century, there was little improvement in the making of mortar for building purposes, and it was a recognized thing in most of the structural work of the middle ages, that a stone and brick construction had to be gone over every few years and repointed with new mortar, and chimneys had constantly to be rebuilt. At the end of that century a petition was presented to the then King of France by a builder, who claimed he had discovered a method of making good mortar, and what he claims to have found was that in all the years gone by, the blunder had been made of allowing the sand and lime to slake together for months at a time in open pits in order that there should be a homogeneous mixture, whereas the real way was to take the lime hot from the kiln and then incorporate with it sand and water. This discovery, however, was but a "flash in the pan," and nothing came of it. In consequence, the history of binding material for structural work remains almost a closed book until we come to about the beginning of the nineteenth century, when the first real progress in the direction of finding a good mortar was made.

To Smeaton, the constructor of the Eddystone light house, is due the credit of the discovery of hydraulic mortars. His problem was the construction of foundations under water in a difficult place, and it was imperative that mortar to set under water should be had. Out of this necessity grew the first introduction of hydraulic cement or hydraulic limestone mortar. In the course of his work he made a number of experiments in the way of burning various lime-

stones for the purpose of procuring lime for his construction, and the result of these tests showed that the theories of the ancients were incorrect, and that the burning of the hard limestones did not give the hardest mortar, as they had supposed. He discovered that the softer limestones, namely, those limestones which contained by analysis, a fair amount of argillaceous substances or clay, would give excellent results in hydraulic construction, and he laid down, as a result of his discovery, the principle that a limestone yielding one-fifth to one-fourth per cent. residue when dissolved in hydrochloric acid, would set under water. To these limestones he gave the definition of hydraulic limestones, and from the principle laid down by him come the two great definitions of what we know as the "natural" and the "artificial," or "Portland" cement of commerce.

While Smeaton had discovered the scientific application of the principle, he reaped no financial reward and it remained for James Parker, of Christ Church, Surrey county, England, to invent and patent a cement in 1796. To this cement he gave the name of Roman cement, claiming it to be the same material as the Romans used. His material was prepared from argillaceous limestone pebbles found in the septaria on the Island of Heppy, Whitstable and Harwich, in England, and he put the article on the market in quite an extensive way. Investigations were going on in France about the same period. Experiments were made under the auspices of government engineers at Metz, Viviers and Nismes, France, with the puzzolan of Italy and the tarras of Germany, and also with well-burned tiles ground to powder, for the production, by the addition of lime, of hydraulic mortar, and in 1812 Vicat, one of the leading engineers in France, started his investigations towards the formulation of a doctrine of calcareous cements, and in collaboration with Messrs. John and Berthier and M. Bruyere, Inspector General of Roads and Bridges, Messrs. Avril and Girard de Caudenberg and Lacordaire, succeeding in arriving at the secret of the production of hydraulic mortar, and actually in an experimental way produced an artificial cement similar to the present Portland cement of commerce.

Concurrent with these scientific researches in France, General Pasley, the leading English engineer, was working in the same direction and discovered in that country the value of burning a mixture of lime and clay to a point of incipient vitrification, but it remained for another than the scientific engineer to succeed on the commercial side of the subject in manufacturing a commercial product.

This was done in 1813 by Jos. Aspdin, a bricklayer of Leeds, England, who took out a patent, which is as follows:



“My method of making a cement or artificial stone for stuccoing buildings, water works, cisterns, or any other purpose to which it may be applicable (and which I call Portland cement) is as follows: I take a specified quantity of limestone, such as that generally used for making or repairing roads, after it is reduced to a puddle or powder; but if I cannot procure a sufficient quantity of the above from the roads, I obtain the limestone itself, and I cause the puddle or powder, or the limestone, as the case may be, to be calcined. I then take a specific quantity of argillaceous earth or clay and mix them with water to a state approaching impalpable, either by manual (sic) labour or machinery. After this proceeding I put the above mixture into a slip pan for evaporation by the heat or by the sun or by submitting it to the action of fire or steam conveyed in flues or pipes under or near the pan, until the water is entirely evaporated. Then I break the said mixture into suitable lumps and calcine it then in a furnace similar to a lime kiln, till the carbonic acid is entirely expelled. The mixture so calcined is to be ground, beat or rolled to a fine powder and is then in a fit state for making cement or artificial stone. This powder is to be mixed with a sufficient quantity of water to bring it into the consistency of mortar and thus applied to the purpose wanted.”

This product he called Portland cement because of its resemblance when set to Portland stone, a well-known building stone of England, and he produced it in a small way in competition with the Roman cement, or Parker's cement, which was then ruling the English market.

He was followed in 1825 by James Frost, a builder of Finchley, who established a cement works at Swanscombe, Kent, which is now the site of one of the principal cement works in England.

In 1847, according to General Pasley's book, there were three Portland cement works then in existence, though in that book Aspdin's Wakefield factory is omitted. By 1843 the competition between the Roman cement made under Parker's process and the Portland cement made under Aspdin's process was very close and many experiments were made to determine which of the two was the better, and as the consensus of opinion at that time was rather in favor of the Roman cement, and as railroad building was at its height in England, Sir Robert Peel, fearing an exhaustion of the septaria out of which Roman cement was made, proposed putting a tax upon it, and it was only upon the assurance of Mr. Aspdin that if the supply of stone failed from which the Roman cement was made, that he could offer an equally good material, that the proposed legislation was abandoned.

The London Exhibition of 1851 again gave occasion for competition between the two grades of cement and it was there that



briquettes, or test pieces for determining the strength of cement, first made their appearance. It was a few years later, however, that the actual determination of the value of Portland cement, as contrasted with natural cement, was finally settled by John Grant, the engineer who had charge of the construction of the London drainage works, and in his two papers published by the British Institute of Civil Engineers, and which formed the first literature on the scientific side of cement testing, he showed conclusively that Portland cement with three parts sand, was practically as strong as Roman cement with one part of sand, and this put Portland cement to the front as a material upon which engineers could rely to the fullest extent.

The commercial introduction of Portland cement in England was soon followed by works in Belgium, Germany and France, many of them being established by associates or relatives of Aspdin and Parker, so that in a very few years after the publication of Grant's paper, the Portland cement industry became a well recognized one, not only in England, but also in the countries of the continent.

In this country the cement industry is contemporaneous with the establishment of the earliest waterways. After the original pioneer had opened roads and in a primitive way had built bridges over the small streams and creeks, commerce required more approved methods of inter-communication for the transportation of heavy freight. This led to the great canal systems, which were the first methods for inter-communication between the Great West and the seaboard. The building of aqueducts, locks and dams for these public works required hydraulic mortars, or cements, and in many of the places where this construction had to be done, limestones were discovered which tested according to the theories of Vicat, Smeaton and Paizley and develop the hydraulic qualities necessary for use in construction under water and were made into natural hydraulic cement. Thus it was that in this country as in England, the natural cement industry preceded the development of the Portland cement industry.

It was in the early part of the nineteenth century that these discoveries were made and between the years 1830 and 1860, cement works were established on the line of the Richmond and Allegheny canal at Balcony Falls—on the Ohio River canal at Louisville, Ky.—on the Chesapeake and Ohio canal at Cumberland and Hancock, Md.; on the Erie canal at Howe's Cave—on the line of the Lehigh canal at Siegfried's Bridge, Pa., on the line of the canal system of the Hudson river, at Rondout, and on the line of the Welland canal, at St. Catharines, Canada.

While this development of the natural cement industry was going on in this country, and large amounts were being made and material of an excellent quality was being turned out, the natural rock cement

of England, as has already been stated, was giving way to the artificial Portland cement. These Portland cements were imported into this country in a very small way in the year 1870, and by reason of their great strength, as well as their adaptability to paving and other important work, their sale began to grow in extent, and American manufacturers and others interested in the development of the natural cement industry commenced to look into the reason why this artificial Portland cement could not be produced in their own country.

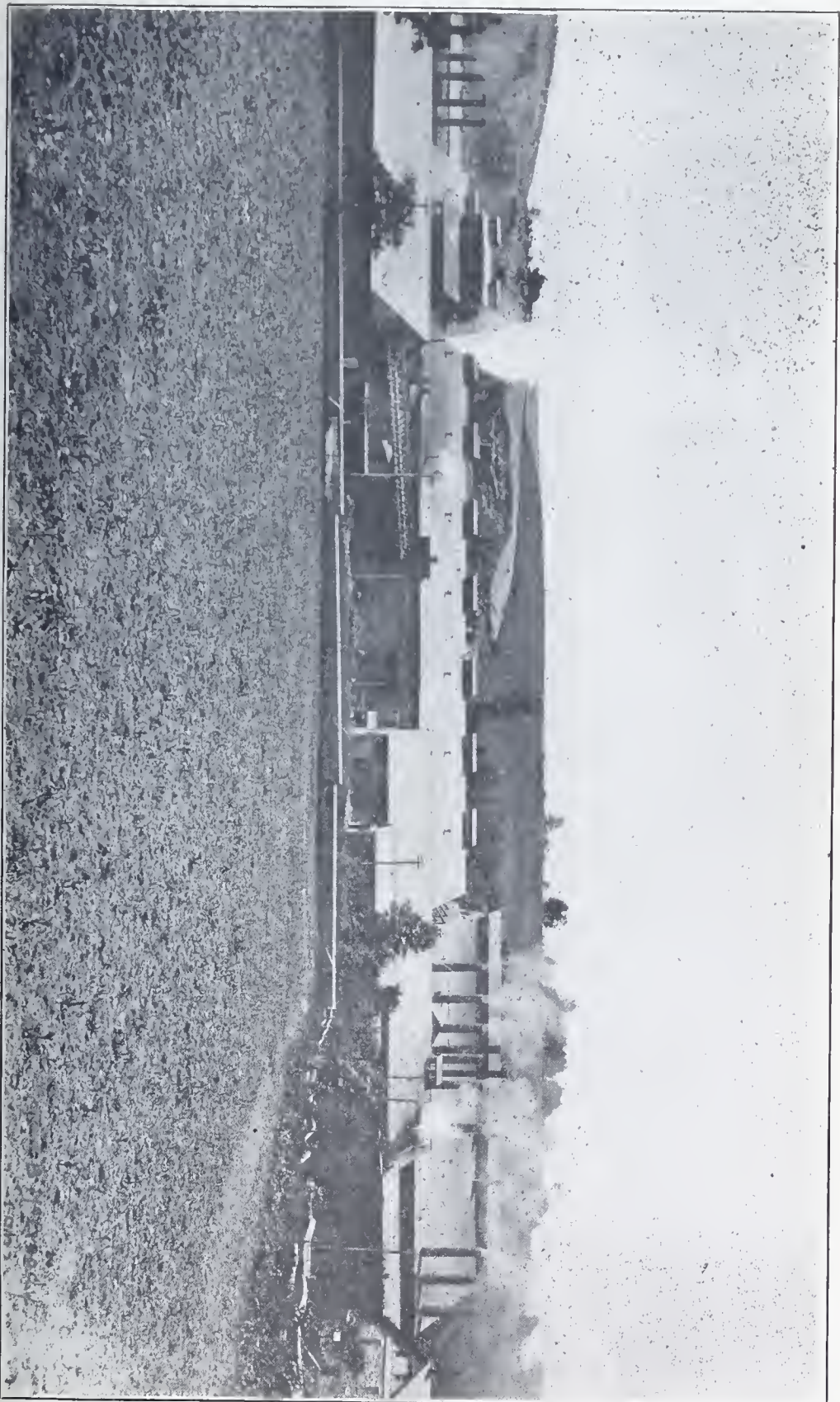
Practically the first of these was Mr. David O. Saylor, of Allentown, Pa., who was operating in the early '70's a small natural cement works along the line of the Lehigh canal at Coplay, Lehigh county, Pa., and his early experiences are most interesting. He ascertained, by experimenting, that by burning to incipient vitrification the natural rocks in his quarry, he could make a cement which, at short periods, showed tensile strains equal to the imported Portland cement. He found, however, that this cement, when it was left for a time in briquettes or in work, would crumble away and that this was due to the variation in the raw material of the rocks which he used. By sheer force of his native ability, Mr. Saylor studied out and successfully applied to the Lehigh rocks the principle that had governed the production of Portland cement in Europe, though he was dealing with a material never before used for the purpose.

He found that it was necessary to grind the raw rocks together to produce a material of uniform analysis, and then that it was necessary to make these rocks into bricks or blocks of homogenous character before placing them in the kilns for calcination. This process is still used in some of the largest works in the Lehigh district.

Mr. Saylor's work was materially aided by Mr. John W. Eckert, graduate of the Lehigh University, who became first the chemist and afterwards the superintendent of the Coplay Cement Company, Mr. Saylor's concern at Coplay Station, which he subsequently left to join in the establishment of the American Cement Company, which had been established by Mr. Robert W. Lesley, who had also been connected with Mr. Saylor.

While this experiment was being carried on to success in the Lehigh region, and the foundations were being laid for the large industry that now exists, a small works was erected near Kalamazoo, Mich., in 1872. Owing to the character of the material and the high cost of labor and fuel, this works made cement which was too expensive commercially and did not succeed. Early in 1875, works were started by Mr. W. P. Shinn, in Lawrence county, Pa., at Wampum, using limestone and clay. These works, now owned by the National Cement Company, are being re-built with a largely increased





A REPRESENTATIVE PENNSYLVANIA CEMENT WORKS.





capacity. At South Bend, Ind., Thomas Millen, an Englishman, found a white marl and blue clay which resembled, in composition though not quite in form, the materials used for cement making in England. He started a small works there in 1877, and the plant is still running, though in a moderate way. Mr. Millen later transferred his field of operations to New York State, where he has large works. The Rockland, Me., lime is well known as one of the best and purest in the country, and it was but natural that the Portland cement industry should seek a lodgment in that field. The Cobb Lime Company, an important concern, there started works in 1879, but the product was too dear for commercial success and they were closed down. For similar causes a like fate overtook the National Cement Company, which was established by Mr. S. D. Coykendall and others on the Hudson, in the well-known natural Rosendale natural cement district. Thus, it may be seen that out of six original works started in this country prior to 1881, three were failures and certainly the industry, with this percentage of loss, did not offer very encouraging outlook to the investor. At this period, the foreign Portland cement had the market exclusively, and there seemed little likelihood of growth for the American industry.

Patents were necessary to enlist capital in the early enterprises and many of the earlier works were founded on them. The great difficulty in all the American enterprises seemed to be the cost of getting the raw material into powder, then into paste, then into bricks or blocks and then into the kiln with a sufficient economy. About 1884 and 1885 patents were taken out by Messrs. James M. Willcox, E. J. DeSmedt and Robert W. Lesley for the purpose of mixing liquid hydro-carbons with the paste. In this way "a slurry" was made, which, when compressed into balls or eggs could be at once put into the kiln, and thus many of the intermediate steps of drying, etc., were dispensed with, and much labor and money saved. These processes, which were used in the works started by the American Cement Company, at Egypt, Lehigh county, Pa., were based upon the use of the by-products of the manufacture of coal gas, but with the introduction of water gas and the consequent advance in the price of coal tar, the processes were abandoned and other methods adopted. While these methods of saving the intermediate process of drying were being used, other inventions by Mathey, Navarro and Ransome in the same direction gave rise to the establishment of the Atlas Portland Cement Company, which has two large works in the Lehigh region and is another large producer of cement. These processes, based originally on the

calcination of the crushed raw rock by oil in revolving kilns, were first unsuccessful, the cement proving unreliable for the same reason that gave Saylor so much trouble originally. Subsequently, however, improvements were made whereby the material was ground to an impalpable powder and slightly moistened before being run through the kiln. This method has proven wonderfully successful and to-day is at the bottom of the wonderful growth of the American Portland cement industry.

### Natural and Portland Cements.

In order that a thorough idea may be had of the cement industry, it is necessary to give some description of the difference between natural and Portland cement, and as to the methods of manufacture and the materials used. Natural cement, as has already been stated, was the first of the hydraulic materials discovered. Broadly speaking, natural cement is made from an argillaceous limestone, which is found in either crystalline or laminated form, and which, when calcined, contains from 40 to 55 per cent. of lime and lime and magnesia, and from 45 to 60 per cent. of argillaceous material, silica, alumina and iron oxide. These limestones, as above stated, are found in many points in the United States, and cement is made from them by calcining them in open kilns, similar to the well-known lime kilns. The cement rock and coal are put in the kiln in alternate layers, and the burned material is drawn from the kiln, while additional material is added at the top and the process might be described as the calcination of argillaceous limestones in continuous kilns at low temperatures. The effect of the burning is to drive out the carbonic acid gas and the moisture, and the material after calcination is taken to crushers, and after it runs through these, is carried to millstones or other form of grinding apparatus, which pulverizes it to infinite fineness. It is then ready for the market.

Natural cement, as can be seen by the above operation, is subject to a number of variations uncontrollable by the manufacturer.

1st. It is made from a rock which may vary from day to day in its constant ingredients.

2d. It may contain more or less moisture.

3d. Its calcination in open kilns is dependent upon the whims of the weather, and

4th. The low temperature at which it is burned does not produce an absolute chemical coming together or combination of all the various ingredients. Therefore, it gets the name of "natural" cement, and may be said to be very safe and sound building material, produced in the best possible way out of a natural material

containing the ingredients which nearly approach the standard of the artificial cement, but which are not exposed to that degree of heat which would bring all the ingredients into close chemical union and activity, especially as the rock is taken in this case just as it comes from the quarry, and there is no attempt to break down its structure or to produce a homogeneous material for calcination, other than the natural rock that God has put in the quarry.

Portland cement is essentially an artificial product. It began with the combination of the chalks and clays of England, which were mixed in the proper proportions to produce, when calcined, the highest grade of Portland cement, and which ran, in the elements of its production, through the whole gamut of all the calcareous substances combined with argillaceous substances. This Portland cement can be produced by properly proportioning limestones, argillaceous limestones, marls and clays, with argillaceous limestones and forms of clays. The basic principle being that the combined material shall, after calcination, analyze from 55 to 65 per cent. in lime, and the balance of silica, alumina and oxide of iron. The further all-important element is, that all these materials shall be broken down into the finest form of powder, so that all the calcareous elements may find equal finely ground argillaceous elements, whereupon to combine and form silicates and aluminates of lime in the chemical crucible of the kiln.

Chemical analysis, as may be seen above, the raw materials for Portland cement embrace a very large field of selection, and success in the manufacture can only be obtained by the closest watchfulness and care, not only in the selection of the materials, but in a chemical analysis.

The first American manufacturers were met by the objection that the raw materials of this country were not similar to those of Europe, and that no good Portland cement could be produced from what nature afforded here, and in the early days it was very difficult to overcome this objection, which was a very proper one in view of the extremely large works on which Portland cement is used and the relative small cost of the mortar to the cost of the works themselves. In view, however, of the fact that the analysis of the raw materials of Portland cement is based, first upon the analysis of the materials themselves and finally for the practical purpose of manufacture to the analysis of the slurry or composition, and that this latter element can be kept constant within fairly reasonable limits, the actual character of the ingredients out of which the slurry or composition is made, providing, when mixed together, they provide in the slurry a material of the proper chemical analysis and of the proper texture—is not so important as it was first thought to have been, and the result of tests of the first



American Portland cements soon overcame the objections that were urged against them on the ground of a lack of proper materials in this country.

The exact chemical composition of a commercial Portland cement varies considerably. The principal constituents are silica, alumina, oxide of iron and lime, which, generally speaking, are found in the manufactured product in, roughly, the following proportions:

Lime, 60 to 64 per cent.

Silica, 20 to 24 per cent.

Alumina, 6 to 10 per cent.

Iron oxide, 3 to 5 per cent.

These four constituents, as a rule, amount together to about 96 per cent., the remainder consisting of small quantities of sulphuric anhydride, magnesia, alkalies, etc.

A Portland cement within the above limits may be made from chalk, marl or limestone containing carbonate of lime between 80 and 100 per cent., and clay containing silica between 60 and 70 per cent., and alumina between 6 and 10 per cent., mixed in proper proportions, or can be made with argillaceous limestone containing 60 to 70 per cent. of carbonate of lime, and limestone containing from 80 to 100 per cent. of carbonate of lime, the balance being silica and alumina. These are, broadly speaking, the materials from which Portland cement is made all over the world, and the composition of the slurry, paste or raw composition powder is so proportioned with the materials above mentioned, as to give substantially an analysis when calcined, between the limits above mentioned of the finished Portland cement.

The following tables from the Mineral Industry of the United States, Vol. 6, of American and Foreign Portland Cements, give a very fair view of the chemical analysis of American Portland cements, as compared with those of Europe:

#### American Portland Cements.

Brand of Cement.	SiO <sub>2</sub> Per Cent.	Al <sub>2</sub> O <sub>3</sub> Per Cent.	Fe <sub>2</sub> O <sub>3</sub> Per Cent.	CaO Per Cent.	MgO Per Cent.	SO <sub>3</sub> Per Cent.	Authority.
Alpha, .....	22.62	8.76	2.66	61.46	2.92	1.52	Booth, Garret & Blair.
Atlas, .....	21.96	8.29	2.67	60.52	3.43	1.49	" " "
Giant, .....	19.92	9.83	2.63	60.32	3.12	1.13	" " "
Saylor's, .....	22.68	6.71	2.35	62.30	3.41	1.88	" " "
Vulcanite, .....	21.08	7.86	2.48	63.68	2.62	1.25	" " "
Empire, .....	22.04	6.45	3.41	60.92	3.53	2.73	" " "
Jordan, .....	21.86	7.17	3.73	61.14	2.34	1.94	" " "
Diamond, .....	21.80	7.95	4.95	61.90	1.64	0.79	" " "
Sandusky, .....	23.08	6.16	2.90	62.38	1.21	1.66	" " "
Bronson, .....	29.95	9.74	3.12	63.17	0.75	0.86	Mfr.'s Analysis.
White Cliffs, Ark., .....	22.93	*10.33	.....	64.67	0.94	1.05	" "

\*Alumina and iron together.

## European Portland Cements.

Brand of Cement.	SiO <sub>2</sub> Per Cent.	Al <sub>2</sub> O <sub>3</sub> Per Cent.	Fe <sub>2</sub> O <sub>3</sub> Per Cent.	CaO Per Cent.	MgO Per Cent.	SO <sub>3</sub> Per Cent.	Authority.
White Label, Alsen, .....	20.48	7.28	3.88	64.30	1.76	2.46	Booth, Garret & Blair.
Dyckerhoff, .....	20.64	7.15	3.69	63.06	2.33	1.39	" " "
Germania, .....	22.08	6.84	3.36	63.72	1.32	1.82	" " "
Hemmoor, .....	21.14	6.95	4.01	63.24	1.44	1.47	" " "
Lagerdorfer, .....	23.55	7.47	2.40	61.93	1.42	1.07	" " "
B. Shoobridge Co., .....	22.20	7.35	4.77	61.46	1.35	1.86	" " "
Francis, .....	22.18	8.48	5.08	61.44	1.34	1.56	" " "
Condor, .....	23.87	6.91	2.27	64.49	1.04	0.88	" " "
Condrot, French, .....	22.30	8.50	3.10	62.80	0.45	0.70	Candlot,
Boulogne, French, .....	22.30	7.00	2.50	64.62	1.04	0.75	"

An examination of these figures will show little, if any, material difference between the cements produced in this country and those of the best brands of Europe, and little, if any, difference between those which have been produced from clay and marl, or chalk and clay as is the case of most of the foreign brands, and the first five of the American brands produced from argillaceous limestone and lime rock, or the last six of the American cements, which are produced from clays and marls and clay and chalk. In other words an application of the test of chemical analysis shows that the Portland cements of this country are practically of the same standard chemical analysis as the best brands produced in Europe.

**Raw Materials.**—The selection of raw materials to be used with relation to the juxtaposition to each other and their geographical situation to fuel and proper transportation facilities, is the first problem that confronts the cement manufacturer. The relation of the selected materials to each other, whether soft or crystalline, is another problem of the greatest importance, but once these prime factors have been selected, whether limestone and clay, marl and clay, cement rock and limestone, etc., the success of the manufacture depends upon the economical handling, calcining and grinding of his materials.

Dividing these subjects under their respective heads and endeavoring to seek the reason of the success of the American manufacture which has caused the wonderful development of the industry in this country already referred to, it will be found that the results spoken of have been achieved by the better handling of the three problems just mentioned.

**Handling of the Raw Material.**—In Europe, where the industry originated in districts where the materials were chalk and clay, the simplest method of handling was to mix the wet chalk with the wet clay in pug mills, chasers or other similar appliances, and by the

addition of large proportions of water to make the mass so wet that it would flow of its own gravity from place to place in the mills and, finally, into the "backs," or settling tanks which, in the large English and German works, cover many acres. The slurry produced by the admixture of the proper proportions of the two ingredients is allowed to dry in these "backs," in some cases, for a period of weeks, and in others for a period of days—the action of the sun evaporating the water and ultimately leaving the material in the shape of a field of sun-baked clay, showing large fissures, or cracks, all over its surface. Under this process, the irregularly shaped cakes above described are taken from the "backs" to the drying floors around the kilns, or to drying chambers forming parts of the kilns.

In the older style of works there was no method of regulating the uniformity of the mixture between the pug mills and the "backs," and thus an irregular mixture might spoil a large batch of raw material. To obviate this, in more modern works, intermediate basins, called basins de dosage, were introduced in France and adopted in other countries, whereby a considerable proportion of the material on its way to the "backs" could be held, pending chemical analysis, so that it could be brought to a proper combination by additions of either argillaceous or calcareous matter, which could be stirred mechanically, thus making the mass of a uniform and proper composition.

Following the wet process above described, a semi-dry process was first introduced in England and instead of passing the raw materials through wet grinding apparatus, they were passed in the form of a paste through millstones or other similar apparatus, which took out all irregularities of form and made a more dry paste, easily pressed into brick or other forms, which could be treated in a much shorter period than under the old methods, and which afforded excellent material for the action of the kiln.

The processes applied to the clays and chalks of England, were also applied to the wet marls and clays of Germany and Belgium, and with equal success, but as the years went on dry limestones were also used in combination with dry clays, or in combination with cement rock, and these materials were all ground and pulverized dry and, following the old-established practice, they were wetted and subjected to the brick process, which prepared them in form for the kiln. In this country, in the early days, the English and German practice was closely followed, for it would have been impossible to introduce a new article bearing the important relation to building that cement does, if the processes of this country differed from that of Europe, the home of the industry. Consequently, when the mills handled the marl and clay of Indiana and of New York



State, they followed closely the English process and made their material quite wet before putting it in the form for the kiln, and Saylor, in his first Lehigh works, dealing with cement rock and argillaceous limestone as his raw material, tried first, as already stated, to make Portland cement by the mere calcination at high temperatures of the rocks, and, failing in this, he quickly went back and followed the English practice by grinding the materials dry and, after wetting and pugging, making them into bricks by hand. All the old methods of preparing the raw material are, as can be seen, predicted upon supplying to the flame of the kiln a property proportioned, thoroughly pulverized material sufficiently mixed, made into forms of some kind, duly dried and thereby presenting to the flame of the kiln a new rock or stone, containing all the ingredients in proper mechanical union for proper calcination. The more modern American methods, based upon the more modern American kiln, which has worked a revolution in the industry, works at a greater economic advantage in the handling of the raw materials. The marls and clays, but more especially the cement rocks and argillaceous limestones, are handled with the greatest economy and greatest dispatch, and while in the handling of marls which in themselves contain a great amount of water the process has been moderately successful only. In the Lehigh field of the State of Pennsylvania, where the great body of argillaceous limestone is used as above stated, this process, with material of this kind, has produced a wonderful development and by it the rock lying in quarries is brought in cars to the crushers and thence by elevators and conveyor to various forms of mills and ground into a powder. Thence, the material having been properly proportioned by chemical analysis is delivered into the kiln ready for calcination, without going into the expensive method of preparation under the old processes first described. Broadly speaking, therefore, it may be stated that the object of the preparation of the material for the kiln, is to have it as intimately mixed as possible, so as to form a homogeneous substance, whether in bricks, balls or other shapes or in powder of infinite fineness.

**Kilns.**—The form of kiln originally used in England and Germany and largely used there at the present day, is the "bottle," or dome kiln, where the raw material above referred to in bricks or other shapes is charged between layers of coke. The kiln is unloaded at the bottom and after the material is drawn from the kiln in the form of clinker the over-burned and under-burned material having been picked out, it is ready for the next operation of grinding.

The books are full of the many variations of this "bottle" kiln and the utilization of the heat in the drying of the raw material. As the kiln is intermittent, an enormous amount of heat is lost when

it is drawn and charged, and a greater amount of heat is lost while the calcination is going on, and for the purpose of economy in this direction, drying chambers of various kinds have been used, and various forms of construction have been adopted.

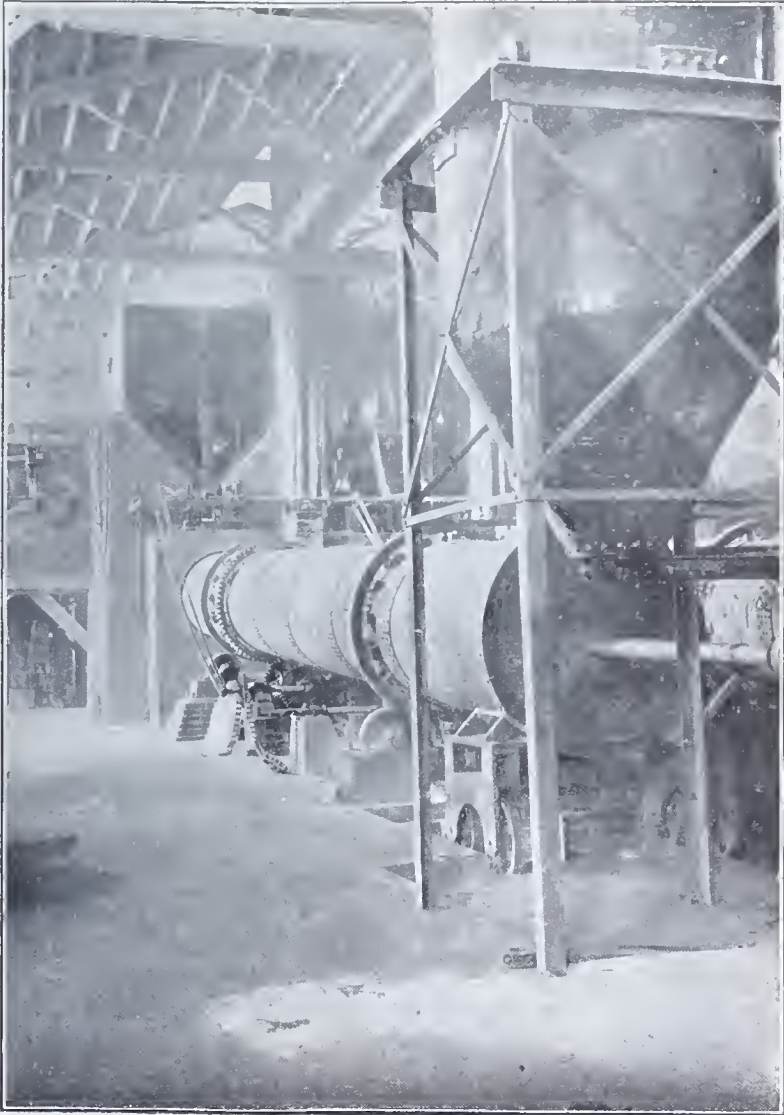
Other forms of kiln are also used, one of the most important being the "Hoffman," which consists of a series of chambers built around a central stack, and by means of dampers the gases of the burning chambers are utilized for the drying of material which is placed in the chambers forming a part of this continuous group. Various adaptations of this kiln are also to be seen in Belgium and Germany. The "Hoffman" kiln enabled the manufacturer to use coal, where as coke had been practically the only fuel economically and successfully used in the old-fashioned dome kiln. In order, therefore, to still further utilize coal and make greater economies, the German set out to devise the adoption of the continuous dome kiln to the manufacture of Portland cement. The Shaefer, the Dietsch and the Schneider kilns are forms of what is known as the Etagen kiln, or kiln in several floors, the first two being of great height have a drying chamber above, a fire zone half way down and a long cooling chamber beneath. The material for these kilns is brought up by elevators, and after calcination, the clinker is taken out below. The Schneider kiln is more especially adapted to the rejuvenating of the old dome kilns, increasing their output at moderate expense, making them continuous.

In France, the Bauchere and Candlot kilns are forms of the German continuous kilns, but instead of having high stacks, they have draught flues from a group of kilns connected with a single stack, which form drying chambers and heating surfaces for the drying of the raw material. All these forms of kilns are applied only to the calcination of the cement making material, when presented in the form of brick or balls or other definite shapes, because if the material were placed in powder, the choking of the kiln would promptly ensue. They are all based upon the European method of handling the raw material. A more economical method of handling the raw material grew out of what is known especially as the American revolving kiln.

#### The American Revolving Kiln.

Strange to say, this kiln had its origin in Europe, and was the invention of Ransome, who was a cement expert and the originator of the well-known Ransome concrete construction. It proved a failure in England and its early days in this country were also marked by adversity. Subsequently, under the successful direction of Navarro, Giron and Whittaker, it was perfected, and in it by far the larger proportion of cement in this country is made, and to

it and the economies it has permitted, is due the wonderful growth of the industry in this country. This kiln, which is shown in the accompanying cut, is an iron cylinder of about sixty feet long by six feet in diameter, and revolving at about one revolution per minute. At one end the raw material is introduced and at the other a

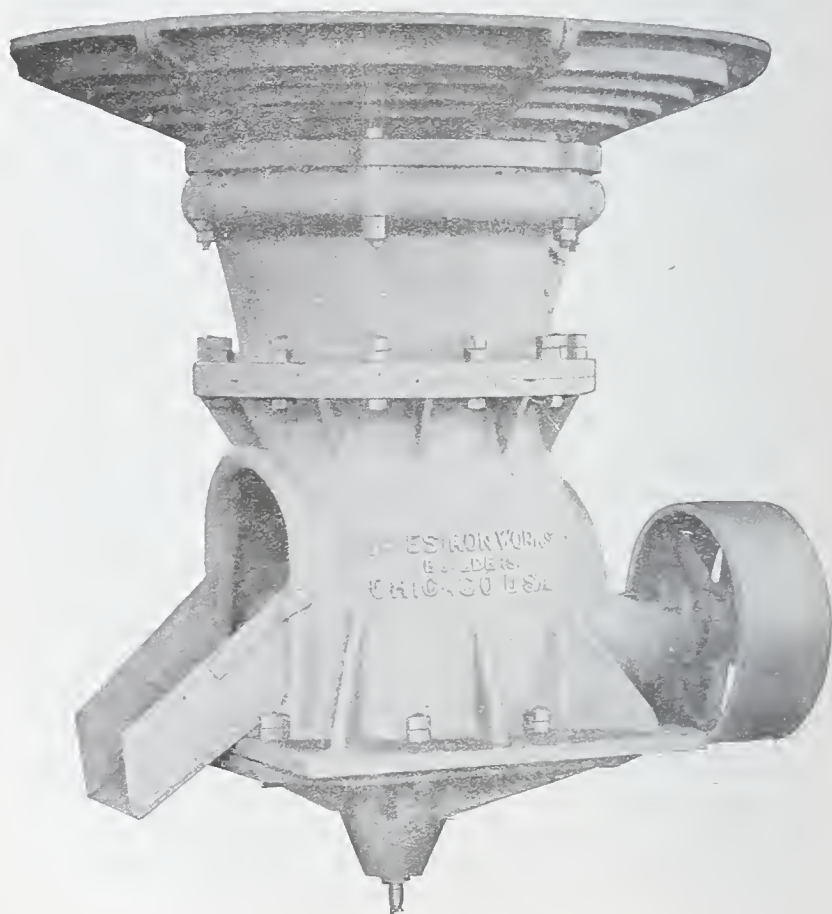


A ROTARY KILN.

flame produced, either by the injection of oil or by driving in by forced draught of pulverized coal is admitted. The effect of the fire is first to drive the moisture and carbonic acid gas out of the raw materials, and subsequently to calcine it into a clinker in the shape of small lumps or nodules. This clinker produced, drops out at the lower end of the kiln, is conveyed to a cooler, a high iron tower, with forced draught, where it is subjected to the action of the air and is subsequently conveyed to the grinding machinery.

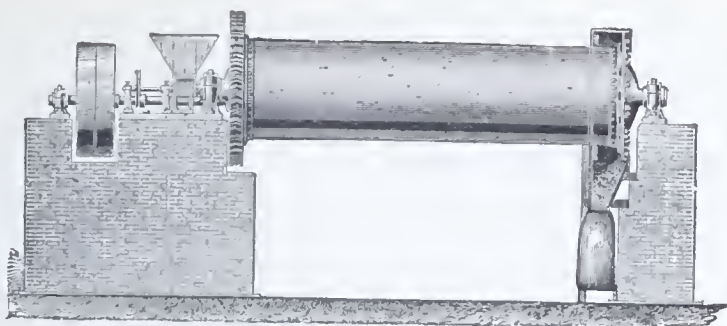


Crushing and Grinding Machinery.—When under the American process it became possible to make cement from practically dry material, as is the case with more than three-fourths of all that is produced in this country, a great economy was effected, both in the fuel consumption and in the handling of the material before calcination. To drive out the moisture from the wet material, in some cases 50 to 60 per cent. of its total weight, a very large proportion of heat had to be used and nearly one-half of the fuel consumed was for the purpose of expelling this water, either added to or found combined in the raw material. It is needless to say that this water added also the bulk of the raw material, and required handling at all the stages of the process, up to and including the process of calcination.

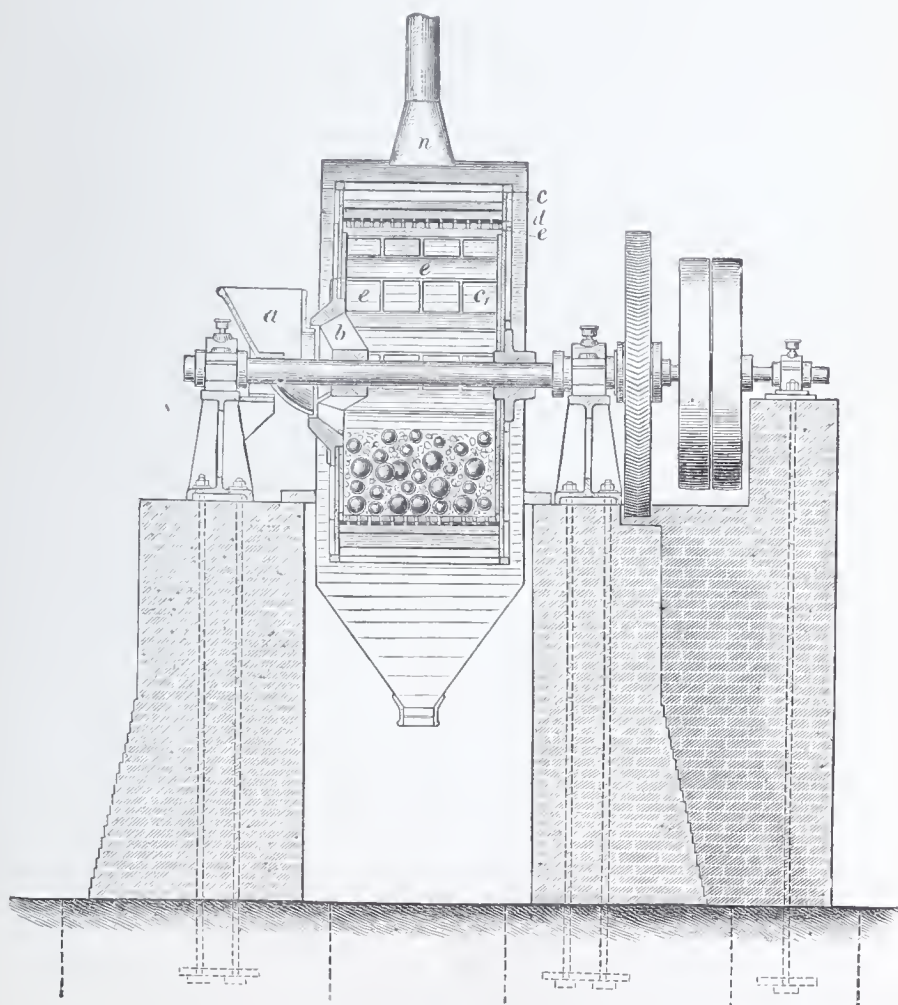


No. 2. GATES CRUSHER.

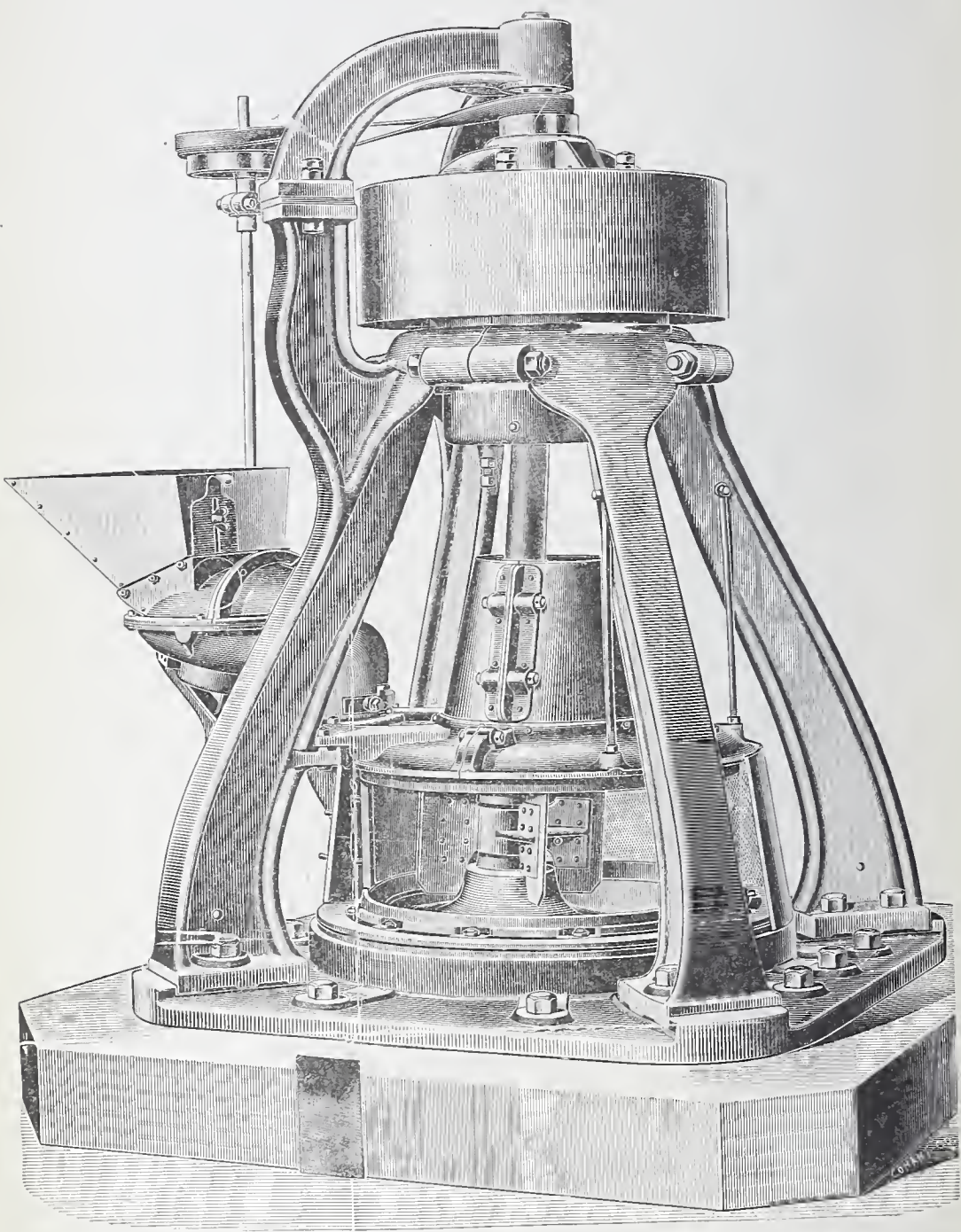
To dispense with this costly process, which could be done by the use of dry raw material, naturally required heavy crushing and grinding apparatus to handle the raw rocks, which took the place of the wet clays, marls and chalks. The American manufacturer was ready to grasp the mechanical appliances invented for this purpose and used in this country. The "Gates Crushers," see Cut No. 2, which had been used largely in the mining regions, were



No. 4. TUBE MILL.



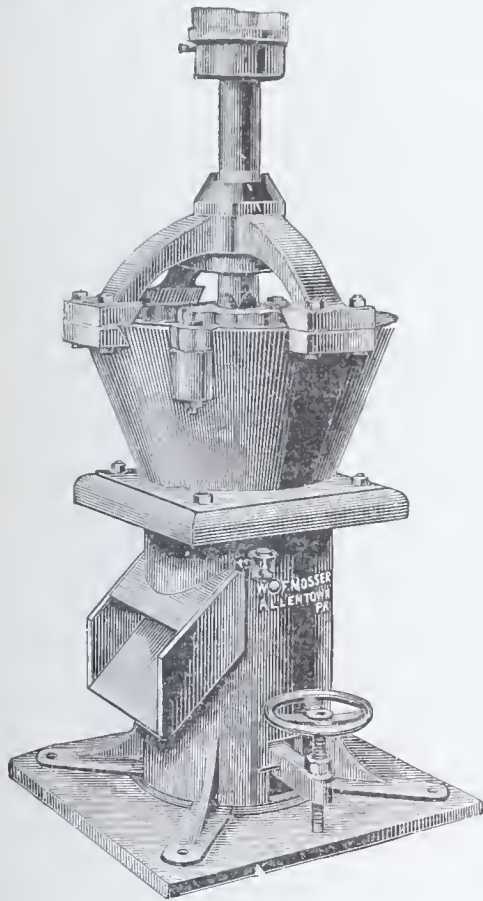
No. 5. BALL MILL.



No. 6. GRIFFIN MILL.



first adopted for the manufacture of cement in Lehigh county, Pa., and are to-day practically standard in all cement mills using rocks as raw materials. After the rocks are crushed in this form of rotary crusher, they are usually fed into a coffee-mill crusher known as the Mosser crusher (Cut No. 3), and the small pieces thus produced



NO. 3. MOSSER CRUSHER.

are in turn run through heavy rolls which crush them still further, and from these rolls they go to mills of either the Griffin or tube mill type.

Europe, the mother of the cement industry derived her ideas of grinding from the mill-stones in the farmer's mills along the banks of the pastoral stream, and this precedent of using mill-stones driven by gearing, still continues to the present day in many European mills even now adays when steam has superseded water as motive power. More modern mills there however, have adopted the second of the mills above mentioned, namely the Tube and Balls Mills as shown in Cuts Nos. 4 and 5, or the Griffin Mill, which is an American invention, shown in Cut No. 6.

It is possibly due to the 'Griffin' Mill, that the preparation of the raw materials in this country was made so cheap, and the introduc-

tion of this mill for the purpose in question, amounts in the field grinding of cement, to almost the same degree of progress, as the rotary kiln does in the field of calcination. Both methods of grinding give excellent results, and may prictically be said to-day to fill the entire field.

The above description of grinding machinery and its development in this country, as applied to the raw material, may also be said to apply to the treatment of the calcined clinker as it comes from the kiln. In Europe, as above stated, the grinding machinery is used practically for the pulverizing of the burnt clinker alone, except in the case where the semi-dry precess is used, but in this country, especially in the Lehigh district in Pennsylvania, the grinding and crushing machinery is used for both the preparation of the raw material and the finished product.

The clinker from the dome, continuous and Hoffman kilns is in the form of small bricks or blocks when drawn therefrom—the carbonic acid gas and moisture having been driven out, the brick which was put in the kiln has shrunk very greatly in size. These bricks or blocks have to be picked over very carefully by hand, and after the over-burned and under-burned pieces have been taken out, the remainder of the material is taken to Gates crushers, where it is crushed, and then by elevators and conveyors delivered to the various crushers above mentioned, and ultimately to the grinding apparatus above described. After it is ground, it is carried away by the same form of conveying apparatus to stock houses. In the case of the product of the revolving kilns, the material is carried automatically by belts to the same form of crushing rolls and crackers.

In this form of clinker, the pieces are no larger than walnuts, are mostly much smaller, and the same method of grinding as above described, is pursued. The finished product delivered in the stock house, is now ready for shipment and is put in barrels, paper or duck bags and loaded upon cars.

Testing.—When the finished product is at last in the stock house, the next duty of the manufacturer is to determine his quality by scientific tests. For this purpose, the chemical and testing laboratory becomes a valuable adjunct to the cement plant. All the principal mills have trained chemists and experts with apparatus of the most scientific character for the purpose of analyzing the raw materials out of which their cement is to be made, and for the further purpose of determining, after manufacture, that the cement conforms to the various specifications adopted by the various engineers and government institutions.

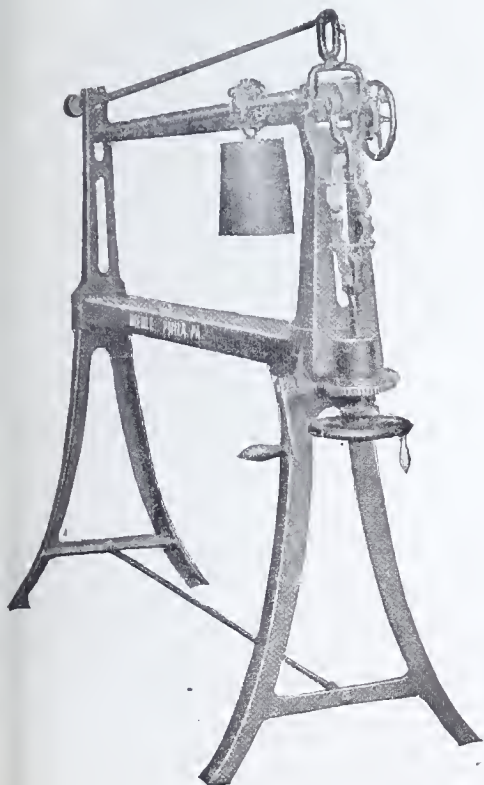
The general requisites in specifications are fineness, tensile strength of the pure cement, and mixtures of cement and sand, and constancy of volume.

Modern specifications may be said for fineness to require that 90 per cent. of the finished product shall pass through a sieve having 100x100 mesh, or say a 10,000 mesh sieve.

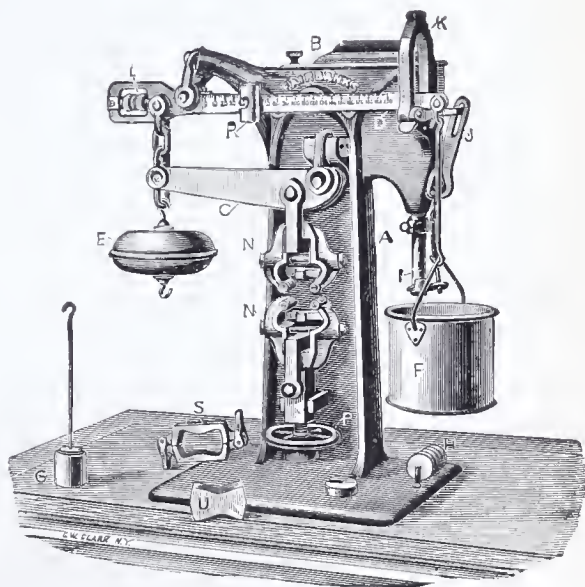
The tensile strain is arrived at by the manufacture, in moulds as per Cut No. 7, of briquettes having a breaking area of one square inch, and these test pieces made of the pure (neat) cement, and in mixtures as high as one part cement to three parts sand, are required to give at 24 hours, 7 days and 28 days, the following results:



No. 7. Testing Clips and Shapes of Briquettes.



No. 8. Riehle Testing Machine.



No. 9. Fairbanks Testing Machine.





	24 hours.	7 days.	28 days.
Neat, .....	100 to 200 pds.	400 to 500 pds.	500 to 700 pds.
One part cement, 3 parts sand, .....		150 to 250 pds.	200 to 300 pds.

These test briquettes are inserted between the grips of the testing machine, shown in Cuts Nos. 8 and 9, and by the application of strain at the rate of 400 pounds per minute, give the results within the limits above mentioned.

For the tests for constancy of volume, small pats are made of the neat cement. One pat is kept in water and the other is kept in air and at the end of 28 days they are to show no disintegration, checking or cracking.

The range of specifications in this country is very broad, and no general system has been adopted, such as has been in Germany, and the variations between the requirements of specification causes no little trouble to the manufacturer. Generally speaking, however, American Portland cements, as contrasted with those made abroad, are showing not only as good but better results, and in this country, as well as in the export trade, are meeting the most exacting of requirements.

Growth of the Industry.—In view of the fact that Portland cement has been for the past thirty (30) years the main binding ingredient of the heaviest masonry in the largest pieces of construction in the world, it can readily be understood the difficulties that were met with in the introduction of American Portland cement.

In the early days of the industry, where the change from the well-known brands of foreign Portland cements to the American product meant but the saving of \$2,000 or \$3,000 in a building involving the cost of \$1,000,000 or more, it was difficult for the American cement, which was at that time considered a doubtful experiment, to obtain a foothold. The prejudice was hard to overcome, but owing to the quality of the American product and the perseverance of the American manufacturer, American Portland cement was gradually forced into the market and by degrees won the laurels which it now wears.

Twenty years ago, the production of American Portland cement amounted to 85,000 barrels per annum. The United States Geological Survey figures for the year 1901, show a production of over 12,700,000 barrels, and this enormous increase in the output of Port-

land cement has been made without diminishing the 8,000,000 or 9,000,000 barrels of natural cement which are still being produced. Practically the same amount of the latter grade of cement has been produced for the last five years.

Without going into the statistics of the production of natural cement at this time, the figures of the U. S. Geological Survey on the production of Portland cement in the United States for the last twenty years are as follows:

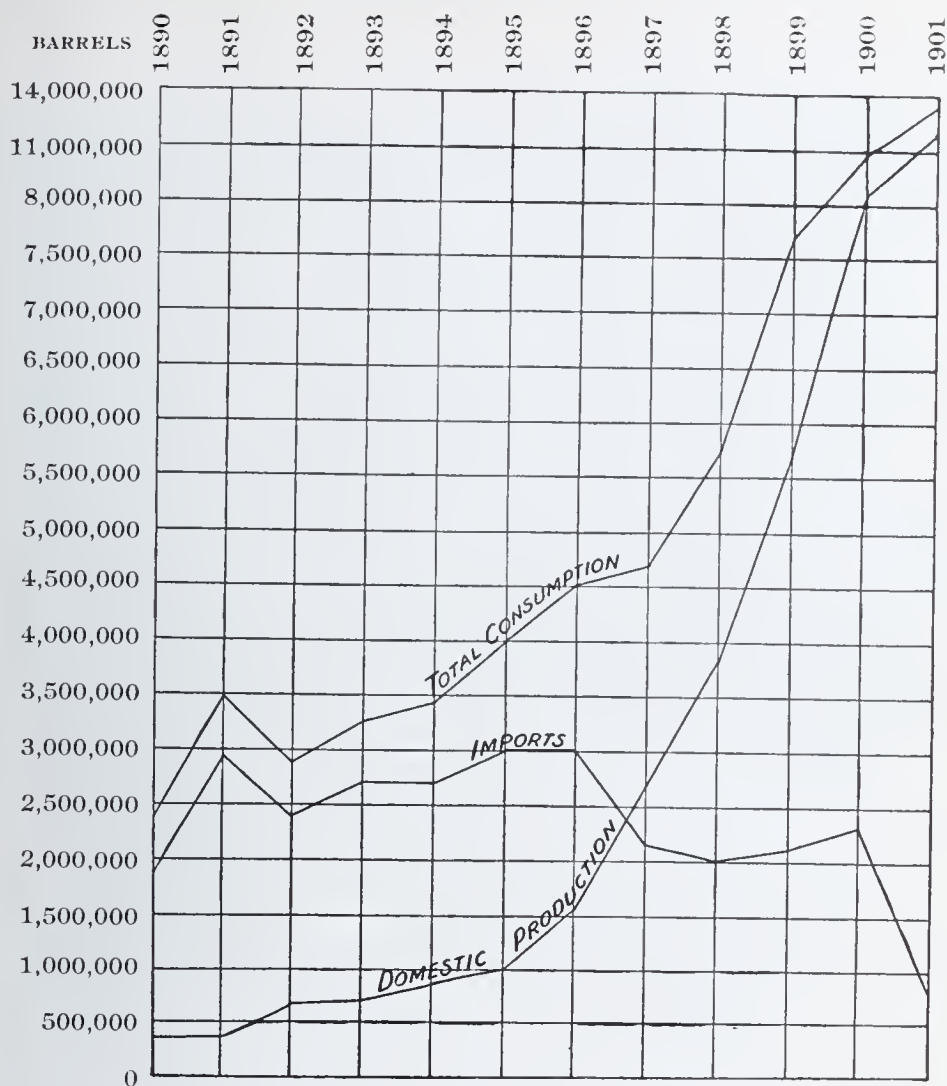
Production of Portland Cement in the United States.

Year.	Number of works.	Number of barrels.
1882, .....		85,000
1883, .....		90,000
1884, .....		100,000
1885, .....		150,000
1886, .....		150,000
1887, .....		250,000
1888, .....		250,000
1889, .....		No estimate.
1890, .....	17	335,500
1891, .....	17	454,813
1892, .....	16	547,440
1893, .....	19	590,652
1894, .....	24	798,757
1895, .....	22	990,320
1896, .....	26	1,543,023
1897, .....	29	2,677,775
1898, .....	31	3,692,284
1899, .....	36	5,652,266
1900, .....	50	8,482,020
1901, .....		12,711,225

It will be noted by the above table that up to the year 1889 that estimates of production merely were given by the U. S. Geological Survey, but since that period, the number of works has been included together with the actual figures covered by the report of the survey.

The following diagram shows the domestic production, importation and total consumption of Portland cement in the United States in the last twelve years:





GRAPHIC REPRESENTATION OF THE PRODUCTION, IMPORTATION AND TOTAL CONSUMPTION OF PORTLAND CEMENT IN THE UNITED STATES FROM 1890 TO 1901.

These figures show that the imports of cement, with some small variations, have remained constant since 1890, but the production of American Portland cement, which in that year amounted to only 335,500 barrels, or 15 per cent of the total amount consumed, has increased in eleven years thirty-five times and now supplies about 95 per cent of the demand.

The production and annual increase of the production for the past twelve years is as follows:

The following table shows the products, imports, exports and consumption of all grades of cement, natural and Portland, for the past five years for "Mineral Industry of the United States." The figures vary from those of the United States Geological Survey, as all cements are taken on a basis of 300-pound barrel as a unit:

### CEMENT PRODUCTION, IMPORTS, EXPORTS, AND CONSUMPTION IN THE UNITED STATES.—IN BARRELS OF 300 POUNDS.

Year.	Production.			
	Natural Hydrau lic.	Portland.	Total Barrels.	Value.
1892, .....	8,211,181	547,440	8,758,621	\$7,152,750
1893, .....	7,445,950	673,989	8,119,939	6,063,131
1894, .....	7,595,259	738,196	8,333,455	5,478,051
1895, .....	7,694,053	998,745	8,692,798	6,027,374
1896, .....	7,407,311	2,103,044	9,510,355	6,888,441
1897, .....	7,781,377	3,030,628	10,812,005	7,648,613
1898, .....	8,161,078	4,989,664	13,150,742	10,223,822
1899, .....	9,686,447	8,067,161	17,753,608	15,860,731
1900, .....	9,177,222	11,309,052	20,486,274	15,393,109

Year.	Imports.		Exports.		Consumption.	
	Barrels.	Value.	Barrels.	Value.	Barrels.	Value.
1892, .....	3,254,183	\$3,378,824	107,894	\$169,538	11,905,000	\$10,361,543
1893, .....	3,565,532	3,470,169	112,518	174,663	11,573,451	9,358,737
1894, .....	3,540,820	3,396,729	120,967	180,881	12,137,953	8,859,708
1895, .....	3,996,520	3,873,123	95,559	131,541	12,676,798	9,931,572
1896, .....	3,561,160	3,394,426	69,632	103,315	12,195,959	9,369,700
1897, .....	2,787,760	2,688,122	61,759	103,389	13,538,006	10,233,346
1898, .....	2,685,092	2,624,228	70,892	98,121	15,764,942	12,749,929
1899, .....	2,810,951	2,858,286	147,029	213,457	20,417,530	18,505,560
1900, .....	3,182,245	3,330,445	186,586	289,186	23,481,933	18,434,368

The growth of the consumption of cement given by periods of ten years is as follows:

Year.	Pounds per capita.
1850, .....	6.46
1860, .....	10.49
1870, .....	12.77
1880, .....	13.04
1890, .....	33.93
1900, .....	91.82



A SERIES OF DOME KILNS IN USE AT A PENNSYLVANIA CEMENT WORKS.





Generally, therefore, it may be safely said that the cement industry is growing rapidly, but most especially is this the case with the manufacture of Portland cement, the production of which this year is expected to largely exceed all previous years.

Growth of the Industry in Pennsylvania.—As stated in the historical portion of this article, the first successful works in the United States were those of Mr. David O. Saylor, at Coplay, Lehigh county, Pa., and this plant, together with the works of the Wampun Cement Company, in Lawrence county, were the first producers in the State of Pennsylvania. It was practically these two works that furnished the 85,000 barrels of Portland cement mentioned in the census of 1882, and during the early years of the industry, when, after the Wampun works ceased to be a large producer, it was the Saylor works that was the largest contributor to the census returns until about the year 1885.

The centre of the industry in this country for years has been in the territory lying practically between Phillipsburg, N. J., and Cementon and Siegfried's Bridge, in Lehigh and Northampton counties, Pa. This field embraces nearly all the largest producing works in the United States, and within it are gathered nearly three-quarters of the total producing capacity in the country. As far back as 1890, when there were sixteen works in the country, the works located in Lehigh county and one works located near Phillipsburg, N. J., produced practically 60 per cent. of all the Portland cement made in this country. This percentage of production has been constant. Almost ever since 1890 the same five works produced 61 per cent. of the total output. In 1897, they produced 74.8 per cent. of the total output. In 1898, the, what is known as the Lehigh district embraced eight works and produced 72.4 per cent. of the 3,692,284 barrels produced in the United States. In 1899, the eleven works embraced in the district above mentioned, produced 72.7 per cent. of the total output, and in 1900 their production was 72.6 per cent. of the total output, the number of works having grown to fifteen. The figures for the year 1901 show that out of 12,711,225 barrels, the output for the Lehigh district was 8,595,340, or over two-thirds of the total output, the number of works having increased but slightly.

What is known as the Lehigh district embraces the following works: In New Jersey: The Edison, Alpha and Vulcanite. In Pennsylvania: The Northampton, Phoenix, Dexter, Nazareth, Atlas, Lawrence, Reading, Bonnevill, Whitehall, Hercules, Coplay, Lehigh, Martin's Creek and American Cement Companies. Most of these companies have more than one works. In addition to these works, outside of this district, but still in the State of Pennsylvania,

is the Clinton Cement Works, near Pittsburg, Pa., where slag cement is made, and the National Cement Company at Wampun, Pa., where Portland cement is made from limestone and clay. Many of the larger works in the Lehigh district have more than a single plant—the Vulcanite Portland Cement Company have two large mills, the Alpha Portland Cement Works have two mills, the Atlas Portland Cement Works have two mills, the Coplay Cement Works have three mills, the Lehigh Portland Cement Works have three mills and the American Cement Company has six mills, all of them in full operation and producing more largely than ever.

The figures for Pennsylvania's production, as set forth on the closing pages of this report, together with what has been above written, form a clear exposition of the history, method of manufacture, scientific control, development and growth of one of the newest and most vigorous of American industries, which had its beginning in our Commonwealth and which, after a period of nearly thirty years, still has within her borders practically 55 per cent. of the total production in this great country.

—Contributed by Robert W. Lesley.



# COMPARATIVE STATISTICS OF MANUFACTURES. 1892 SERIES.

## DAYS IN OPERATION.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION BY SAME ESTABLISHMENTS FOR EACH OF THE YEARS 1892, 1893, 1894, 1895 1896, 1897, 1898, 1899, 1900 AND 1901.

NOTE.—(In this table the average number of days of employment by the same establishments for each of the years 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 and 1901 is presented, with the relative increase or decrease, together with the increase or decrease 1901 over 1892. Forty-four industries, representing 354 establishments, are considered.)

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
PIG IRON.				
1892, .....	13	321	....	....
1893, .....	13	286	—35	....
1894, .....	13	301	+15	....
1895, .....	13	327	+26	....
1896, .....	13	293	—34	....
1897, .....	13	319	+26	....
1898, .....	13	344	+25	....
1899, .....	13	322	—22	....
1900, .....	13	316	—6	....
1901, .....	13	337	+21	+16
ROLLING MILLS—GENERAL PRODUCT.				
1892, .....	32	314	....	....
1893, .....	32	307	—7	....
1894, .....	32	300	—7	....
1895, .....	32	310	+10	....

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION BY SAME ESTABLISHMENTS FOR EACH OF THE YEARS 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
ROLLING MILLS—GENERAL PRODUCT—Continued.				
1896, .....	32	308	—2	....
1897, .....	32	311	+3	....
1898, .....	32	321	+10	....
1899, .....	32	324	+3	....
1900, .....	32	320	—4	....
1901, .....	32	316	—4	+02
IRON AND STEEL SHEETS AND PLATES.				
1892, .....	14	290	....	....
1893, .....	14	243	—47	....
1894, .....	14	267	+24	....
1895, .....	14	307	+40	....
1896, .....	14	258	—49	....
1897, .....	14	271	+13	....
1898, .....	14	290	+19	....
1899, .....	14	294	+4	....
1900, .....	14	272	—22	....
1901, .....	14	278	+6	—12
PLATE AND BAR.				
1892, .....	3	250	....	....
1893, .....	3	198	—52	....
1894, .....	3	232	+34	....
1895, .....	3	257	+25	....
1896, .....	3	229	—28	....

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION BY SAME ESTABLISHMENTS FOR EACH OF THE YEARS 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
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## PLATE AND BAR—Continued.

1897, .....	3	285	+56	....
1898, .....	3	300	+15	....
1899, .....	3	302	+2	....
1900, .....	3	284	—18	....
1901, .....	3	291	+7	+41

## STEEL.

1892, .....	13	281	....	....
1893, .....	13	276	—11	....
1894, .....	13	272	+2	....
1895, .....	13	279	+7	....
1896, .....	13	219	—60	....
1897, .....	13	271	+52	....
1898, .....	13	282	+11	....
1899, .....	13	285	+3	....
1900, .....	13	281	—4	....
1901, .....	13	296	+15	+15

## ARCHITECTURAL CAST AND WROUGHT IRON WORK.

1892, .....	4	307	....	....
1893, .....	4	308	+1	....
1894, .....	4	307	—1	....
1895, .....	4	306	—1	....
1896, .....	4	305	—1	....
1897, .....	4	304	—1	...

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION BY SAME ESTABLISHMENTS FOR EACH OF THE YEARS 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
ARCHITECTURAL CAST AND WROUGHT IRON WORK—Continued.				
1898, .....	4	306	+2	....
1899, .....	4	305	—1	....
1900, .....	4	305	....	....
1901, .....	4	306	+1	—1
IRON FORGING.				
1892, .....	4	262	....	....
1893, .....	4	244	—18	....
1894, .....	4	296	+52	....
1895, .....	4	289	—7	....
1896, .....	4	246	—43	....
1897, .....	4	267	+21	....
1898, .....	4	293	+26	....
1899, .....	4	295	+2	....
1900, .....	4	285	—10	....
1901, .....	4	295	+10	+33
NAILS AND SPIKES.				
1892, .....	10	256	....	....
1893, .....	10	230	—26	....
1894, .....	10	228	—2	....
1895, .....	10	220	—8	....
1896, .....	10	205	—15	....
1897, .....	10	242	+38	....
1898, .....	10	205	—38	....



## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION BY SAME ESTABLISHMENTS FOR EACH OF THE YEARS 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease(—) as compared with the preceding year.	Increase(+) or decrease(—) 1901 as compared with 1892.
NAILS AND SPIKES—Continued.				
1899, .....	10	229	+24	....
1900, .....	10	208	—21	....
1901, .....	10	266	+58	+10
NUTS AND BOLTS.				
1892, .....	2	306	....	....
1893, .....	2	305	—1	....
1894, .....	2	288	—17	....
1895, .....	2	291	+3	....
1896, .....	2	298	+7	....
1897, .....	2	304	+6	....
1898, .....	2	306	+2	....
1899, .....	2	304	—2	....
1900, .....	2	295	—9	....
1901, .....	2	286	—9	—20
PIPES AND TUBES.				
1892, .....	4	267	....	....
1893, .....	4	260	—7	....
1894, .....	4	268	+8	....
1895, .....	4	288	+20	....
1896, .....	4	296	+8	....
1897, .....	4	278	—18	....
1898, .....	4	284	+6	....
1899, .....	4	279	—5	....
1900, .....	4	283	+4	....
1901, .....	4	303	+20	+36

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION BY SAME ESTABLISHMENTS FOR EACH OF THE YEARS 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
IRON FOUNDRIES AND MACHINE WORKS.				
1892, .....	25	301	....	....
1893, .....	25	279	—22	....
1894, .....	25	282	+3	....
1895, .....	25	299	+17	....
1896, .....	25	289	—10	....
1897, .....	25	298	+9	....
1898, .....	25	300	+2	....
1899, .....	25	305	+5	....
1900, .....	25	303	—2	....
1901, .....	25	303	....	+2
STOVES, RANGES, HEATERS, ETC.				
1892, .....	9	284	....	....
1893, .....	9	272	—12	....
1894, .....	9	210	—62	....
1895, .....	9	229	+19	....
1896, .....	9	222	—7	....
1897, .....	9	236	+14	....
1898, .....	9	246	+10	....
1899, .....	9	247	+1	....
1900, .....	9	224	—23	....
1901, .....	9	234	+10	—50

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION BY SAME ESTABLISHMENTS FOR EACH OF THE YEARS 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average number of days in opera- tion.	Increase (+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease (—) 1901 as compared with 1892.
HARDWARE.				
1892, .....	4	295	....	....
1893, .....	4	249	—46	....
1894, .....	4	205	—44	....
1895, .....	4	260	+55	....
1896, .....	4	260	....	....
1897, .....	4	261	+1	....
1898, .....	4	233	—28	....
1899, .....	4	268	+35	....
1900, .....	4	247	—21	....
1901, .....	4	293	+46	—2
MALLEABLE IRON.				
1892, .....	2	302	....	....
1893, .....	2	262	—40	....
1894, .....	2	247	—15	....
1895, .....	2	272	+25	....
1896, .....	2	270	—2	....
1897, .....	2	273	+3	....
1898, .....	2	292	+19	....
1899, .....	2	292	....	....
1900, .....	2	273	—19	....
1901, .....	2	302	+29	....
SAWS, EDGE TOOLS, ETC.				
1892, .....	5	302	....	....
1893, .....	5	284	—18	....

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION BY SAME ESTABLISHMENTS FOR EACH OF THE YEARS 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average number of days in opera- tion.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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## SAWS, EDGE TOOLS, ETC.—Continued.

1894, .....	5	286	+2	....
1895, .....	5	294	+8	....
1896, .....	5	279	—15	....
1897, .....	5	274	—5	....
1898, .....	5	299	+25	....
1899, .....	5	301	+2	....
1900, .....	5	309	+8	....
1901, .....	5	301	—8	—1

## METAL AND METALLIC GOODS.

1892, .....	8	321	....	....
1893, .....	8	282	—39	....
1894, .....	8	288	+6	....
1895, .....	8	311	+23	....
1896, .....	8	304	—7	....
1897, .....	8	288	—16	....
1898, .....	8	309	+21	....
1899, .....	8	324	+15	....
1900, .....	8	304	—20	....
1901, .....	8	326	+22	+5

## LOCOMOTIVES AND ENGINES.

1892, .....	14	305	....	....
1893, .....	14	284	—21	....
1894, .....	14	267	—17	....



## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION BY SAME ESTABLISHMENTS FOR EACH OF THE YEARS 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
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LOCOMOTIVES AND ENGINES—  
Continued.

1895, .....	14	292	+25	....
1896, .....	14	291	—1	....
1897, .....	14	295	+4	....
1898, .....	14	301	+6	....
1899, .....	14	306	+5	....
1900, .....	14	307	+1	....
1901, .....	14	304	—3	—1

ENGINES AND BOILERS.

1892, .....	6	323	....	...
1893, .....	6	289	—34	....
1894, .....	6	298	+9	....
1895, .....	6	292	—6	....
1896, .....	6	291	—1	....
1897, .....	6	297	+6	....
1898, .....	6	303	+6	....
1899, .....	6	303	....	....
1900, .....	6	302	—1	....
1901, .....	6	301	—1	--22

BOILERS.

1892, .....	7	277	....	....
1893, .....	7	250	—27	....
1894, .....	7	220	—30	....
1895, .....	7	205	—15	....

DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION BY SAME ESTABLISHMENTS FOR EACH OF THE YEARS 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
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BOILERS—Continued.

1896, .....	7	209	+4	....
1897, .....	7	248	+39	....
1898, .....	7	277	+29	....
1899, .....	7	307	+30	....
1900, .....	7	308	+1	....
1901, .....	7	308	....	+31

BRIDGES.

1892, .....	4	310	....	....
1893, .....	4	305	—5	....
1894, .....	4	305	....	....
1895, .....	4	303	—2	....
1896, .....	4	285	—18	....
1897, .....	4	305	+20	....
1898, .....	4	304	—1	....
1899, .....	4	284	—20	....
1900, .....	4	297	+13	....
1901, .....	4	309	+12	—1

CAR SPRINGS.

1892, .....	1	312	....	....
1893, .....	1	312	....	....
1894, .....	1	255	—57	....
1895, .....	1	277	+22	....
1896, .....	1	255	—22	....
1897, .....	1	244	—11	....

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION BY SAME ESTABLISHMENTS FOR EACH OF THE YEARS 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
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## CAR SPRINGS—Continued.

1898, .....	1	286	+42	....
1899, .....	1	300	+14	....
1900, .....	1	305	+5	....
1901, .....	1	303	—2	—9

## CAR COUPLERS.

1892, .....	1	310	....	....
1893, .....	1	248	—62	....
1894, .....	1	203	—45	....
1895, .....	1	285	+82	....
1896, .....	1	303	+18	....
1897, .....	1	303	....	....
1898, .....	1	303	....	....
1899, .....	1	303	....	....
1900, .....	1	303	....	....
1901, .....	1	303	....	—7

## CARS AND CAR WHEELS.

1892, .....	8	301	....	....
1893, .....	8	282	—19	....
1894, .....	8	261	—21	....
1895, .....	8	303	+42	....
1896, .....	8	284	—19	....
1897, .....	8	288	+4	....
1898, .....	8	297	+9	....
1899, .....	8	304	+7	....

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION BY SAME ESTABLISHMENTS FOR EACH OF THE YEARS 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
CARS AND CAR WHEELS—Continued.				
1900, .....	8	304	....	....
1901, .....	8	305	+1	+4
WINDOW GLASS, BOTTLE AND TABLE GOODS.				
1892, .....	17	253	....	....
1893, .....	17	195	—58	....
1894, .....	17	261	+66	....
1895, .....	17	241	—20	....
1896, .....	17	229	—12	....
1897, .....	17	268	+39	....
1898, .....	17	271	+3	....
1899, .....	17	264	—7	....
1900, .....	17	244	—20	....
1901, .....	17	235	—9	—18
SHIP BUILDING.				
1892, .....	1	310	....	....
1893, .....	1	309	—1	....
1894, .....	1	310	+1	....
1895, .....	1	307	—3	....
1896, .....	1	307	....	....
1897, .....	1	310	+3	....
1898, .....	1	307	—3	....
1899, .....	1	302	—5	....
1900, .....	1	302	....	....
1901, .....	1	313	+11	+3



## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION BY SAME ESTABLISHMENTS FOR EACH OF THE YEARS 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
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## PIANOS AND ORGANS.

1892, .....	2	393	....	....
1893, .....	2	280	—23	....
1894, .....	2	259	—21	....
1895, .....	2	290	+31	....
1896, .....	2	298	+8	....
1897, .....	2	298	....	....
1898, .....	2	296	—2	....
1899, .....	2	300	+4	....
1900, .....	2	304	+4	....
1901, .....	2	299	—5	—4

## RUBBER BOOTS AND SHOES.

1892, .....	1	250	....	....
1893, .....	1	230	—20	....
1894, .....	1	248	+18	....
1895, .....	1	271	+23	....
1896, .....	1	244	—27	....
1897, .....	1	222	—22	....
1898, .....	1	244	+22	....
1899, .....	1	243	—1	....
1900, .....	1	233	—10	....
1901, .....	1	268	+35	+18

## CARBONS.

1892, .....	1	300	....	...
1893, .....	1	300	....	...

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION BY SAME ESTABLISHMENTS FOR EACH OF THE YEARS 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
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## CARBONS—Continued.

1894, .....	1	300	....	....
1895, .....	1	300	....	....
1896, .....	1	310	+10	....
1897, .....	1	310	....	....
1898, .....	1	310	....	....
1899, .....	1	290	—20	....
1900, .....	1	284	—6	....
1901, .....	1	294	+10	—6

## CARPETS.

1892, .....	24	280	....	....
1893, .....	24	218	—62	....
1894, .....	24	259	+41	....
1895, .....	24	277	+18	....
1896, .....	24	263	—14	....
1897, .....	24	291	+28	....
1898, .....	24	286	—5	....
1899, .....	24	299	+13	....
1900, .....	24	297	—2	....
1901, .....	24	290	—7	+10

## WOOLEN YARNS.

1892, .....	10	299	....	....
1893, .....	10	245	—54	....
1894, .....	10	277	+32	....
1895, .....	10	293	+16	....

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION BY SAME  
ESTABLISHMENTS FOR EACH OF THE YEARS 1892, 1893, 1894, 1895, 1896,  
1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average number of days in opera- tion.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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## WOOLEN YARNS—Continued.

1896, .....	10	269	—24	....
1897, .....	10	296	+27	....
1898, .....	10	274	—22	....
1899, .....	10	274	....	....
1900, .....	10	299	+25	....
1901, .....	10	296	—3	—3

## COTTON YARNS.

1892, .....	3	296	....	....
1893, .....	3	250	—46	....
1894, .....	3	261	+11	....
1895, .....	3	288	+27	....
1896, .....	3	276	—12	....
1897, .....	3	297	+21	....
1898, .....	3	295	—2	....
1899, .....	3	306	+11	....
1900, .....	3	306	....	....
1901, .....	3	288	—18	—8

## WORSTED YARNS.

1892, .....	3	300	....	....
1893, .....	3	199	—101	....
1894, .....	3	277	+78	....
1895, .....	3	301	+24	....
1896, .....	3	246	—55	....
1897, .....	3	288	+42	....

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION BY SAME ESTABLISHMENTS FOR EACH OF THE YEARS 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
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## WORSTED YARNS—Continued.

1898, .....	3	256	—32	....
1899, .....	3	290	+34	....
1900, .....	3	295	+5	....
1901, .....	3	297	+2	—3

## MISCELLANEOUS YARNS.

1892, .....	9	302	....	....
1893, .....	9	252	—50	....
1894, .....	9	262	+10	....
1895, .....	9	284	+22	....
1896, .....	9	214	—70	....
1897, .....	9	283	+69	....
1898, .....	9	263	—20	....
1899, .....	9	275	+12	....
1900, .....	9	268	—7	....
1901, .....	9	289	+21	—13

## WOOLEN GOODS.

1892, .....	16	299	....	....
1893, .....	16	245	—54	....
1894, .....	16	278	+33	....
1895, .....	16	298	+20	....
1896, .....	16	274	—24	....
1897, .....	16	290	+16	....
1898, .....	16	289	—1	....
1899, .....	16	287	—2	....



## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION BY SAME ESTABLISHMENTS FOR EACH OF THE YEARS 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase (+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
WOOLEN GOODS—Continued.				
1900, .....	16	291	+4	....
1901, .....	16	280	—11	—19
COTTON GOODS.				
1892, .....	17	303	....	....
1893, .....	17	249	—54	....
1894, .....	17	246	—3	....
1895, .....	17	285	+39	....
1896, .....	17	258	—27	....
1897, .....	17	293	+35	....
1898, .....	17	298	+5	....
1899, .....	17	299	+1	....
1900, .....	17	288	—11	....
1901, .....	17	282	—6	—21
COTTON AND WOOLEN GOODS.				
1892, .....	12	301	....	....
1893, .....	12	255	—46	....
1894, .....	12	258	+3	....
1895, .....	12	265	+7	....
1896, .....	12	220	—45	....
1897, .....	12	270	+50	....
1898, .....	12	272	+2	....
1899, .....	12	274	+2	....
1900, .....	12	258	—16	....
1901, .....	12	263	+5	—38

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION BY SAME ESTABLISHMENTS FOR EACH OF THE YEARS 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
WORSTED GOODS.				
1892, .....	3	310	....	....
1893, .....	3	222	—88	....
1894, .....	3	237	+15	....
1895, .....	3	265	+28	....
1896, .....	3	220	—45	....
1897, .....	3	289	+69	....
1898, .....	3	273	—16	....
1899, .....	3	295	+22	....
1900, .....	3	258	—37	....
1901, .....	3	253	—5	—57
KNIT GOODS.				
1892, .....	5	313	....	....
1893, .....	5	278	—35	....
1894, .....	5	254	—24	....
1895, .....	5	283	+29	....
1896, .....	5	261	—22	....
1897, .....	5	271	+10	....
1898, .....	5	253	—18	....
1899, .....	5	282	+29	....
1900, .....	5	285	+3	....
1901, .....	5	257	—28	—56
CHENILLE GOODS.				
1892, .....	5	322	....	....
1893, .....	5	295	—27	....

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION BY SAME ESTABLISHMENTS FOR EACH OF THE YEARS 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
CHENILLE GOODS—Continued.				
1894, .....	5	299	+4	....
1895, .....	5	300	+1	....
1896, .....	5	291	—9	....
1897, .....	5	301	+10	....
1898, .....	5	302	+1	....
1899, .....	5	292	—10	....
1900, .....	5	264	—28	....
1901, .....	5	281	+17	—41
MIXED TEXTILES.				
1892, .....	9	303	....	....
1893, .....	9	290	—13	....
1894, .....	9	289	—1	....
1895, .....	9	298	+9	....
1896, .....	9	282	—16	....
1897, .....	9	282	....	....
1898, .....	9	300	+18	....
1899, .....	9	300	....	....
1900, .....	9	300	....	....
1901, .....	9	289	—11	—14
TAPESTRY AND TABLE COVERS.				
1892, .....	3	302	....	....
1893, .....	3	291	—11	....
1894, .....	3	300	+9	....
1895, .....	3	295	—5	....

DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION BY SAME ESTABLISHMENTS FOR EACH OF THE YEARS 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase( +, or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
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TAPESTRY AND TABLE COVERS—Continued.

1896, .....	3	289	—6	....
1897, .....	3	291	+2	....
1898, .....	3	291	....	....
1899, .....	3	277	—14	....
1900, .....	3	252	—25	....
1901, .....	3	277	+25	—25

HOSIERY.

1892, .....	13	296	....	....
1893, .....	13	261	—35	....
1894, .....	13	273	+12	....
1895, .....	13	294	+21	....
1896, .....	13	288	—6	....
1897, .....	13	288	....	....
1898, .....	13	279	—9	....
1899, .....	13	280	+1	....
1900, .....	13	275	—5	....
1901, .....	13	290	+15	—6

HOSIERY AND KNIT GOODS.

1892, .....	3	300	....	....
1893, .....	3	293	—7	....
1894, .....	3	300	+7	....
1895, .....	3	272	—28	....
1896, .....	3	289	+17	....



## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION BY SAME ESTABLISHMENTS FOR EACH OF THE YEARS 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average number of days in opera- tion.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
HOSIERY AND KNIT GOODS— Continued.				
1897, .....	3	300	+11	....
1898, .....	3	300	....	....
1899, .....	3	300	....	....
1900, .....	3	297	—3	....
1901, .....	3	298	+1	—2
SILK BROAD GOODS.				
1892, .....	4	304	....	....
1893, .....	4	247	—57	....
1894, .....	4	292	+45	....
1895, .....	4	303	+11	....
1896, .....	4	274	—29	....
1897, .....	4	303	+29	....
1898, .....	4	292	—11	....
1899, .....	4	301	+9	....
1900, .....	4	285	—16	....
1901, .....	4	268	—17	—36

## PERSONS EMPLOYED.

COMPARISON OF NUMBER OF PERSONS EMPLOYED, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

(In this table the average number of persons employed by the same establishments for each of the years 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 and 1901 is presented with the relative increase or decrease, together with the increase or decrease 1901 over 1892. Forty-four industries, representing 354 establishments as considered.)

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Number of persons employed.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
PIG IRON.				
1892, .....	13	2,668	.....	.....
1893, .....	13	2,222	—446	.....
1894, .....	13	1,751	—471	.....
1895, .....	13	2,269	+518	.....
1896, .....	13	2,242	—27	.....
1897, .....	13	1,904	—338	.....
1898, .....	13	2,124	+220	.....
1899, .....	13	3,015	+891	.....
1900, .....	13	3,057	+42	.....
1901, .....	13	2,459	—598	—209
ROLLING MILLS—GENERAL PRODUCT.				
1892, .....	32	35,368	.....	.....
1893, .....	32	32,695	—2,663	.....
1894, .....	32	30,120	—2,575	.....
1895, .....	32	35,123	+5,003	.....
1896, .....	32	34,755	—368	.....
1897, .....	32	35,579	+824	.....
1898, .....	32	40,175	+4,596	.....

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF PERSONS EMPLOYED, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Number of persons employed.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
ROLLING MILLS—GENERAL PRODUCT—Continued.				
1899, .....	32	43,533	+3,358	.....
1900, .....	32	29,873	—13,660	.....
1901, .....	32	38,724	+8,851	+3,356
IRON AND STEEL SHEETS AND PLATES.				
1892, .....	14	5,089	.....	.....
1893, .....	14	4,590	—499	.....
1894, .....	14	4,294	—296	.....
1895, .....	14	4,869	+575	.....
1896, .....	14	4,522	—347	.....
1897, .....	14	5,205	+683	.....
1898, .....	14	6,524	+1,319	.....
1899, .....	14	8,327	+1,803	.....
1900, .....	14	7,884	—443	.....
1901, .....	14	9,456	+1,572	+4,367
PLATE AND BAR.				
1892, .....	3	3,269	.....	.....
1893, .....	3	2,330	—939	.....
1894, .....	3	1,735	—595	.....
1895, .....	3	2,263	+528	.....
1896, .....	3	1,295	—968	.....
1897, .....	3	1,360	+65	.....
1898, .....	3	2,372	+1,012	.....
1899, .....	3	2,709	+337	.....

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF PERSONS EMPLOYED, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Number of persons employed.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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## PLATE AND BAR—Continued.

1900, .....	3	2,752	+43	.....
1901, .....	3	1,595	—1,157	—1,674

## STEEL.

1892, .....	13	13,075	.....	.....
1893, .....	13	10,585	—2,490	.....
1894, .....	13	9,778	—807	.....
1895, .....	13	12,138	+2,360	.....
1896, .....	13	10,058	—2,080	.....
1897, .....	13	10,361	+303	.....
1898, .....	13	12,176	+1,815	.....
1899, .....	13	14,578	+2,402	.....
1900, .....	13	8,138	—6,440	.....
1901, .....	13	17,480	+9,342	+4,405

ARCHITECTURAL CAST AND  
WROUGHT IRON WORKS.

1892, .....	4	1,350	.....	.....
1893, .....	4	1,202	—148	.....
1894, .....	4	976	—226	.....
1895, .....	4	1,438	+462	.....
1896, .....	4	1,298	—140	.....
1897, .....	4	1,086	—212	.....
1898, .....	4	1,435	+349	.....
1899, .....	4	1,755	+320	.....
1900, .....	4	2,321	+566	.....
1901, .....	4	2,601	+280	+1,251



## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF PERSONS EMPLOYED, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Number of persons employed.	Increase (+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease (—) 1901 as compared with 1892.
IRON FORGING.				
1892, .....	4	583	.....	.....
1893, .....	4	507	—76	.....
1894, .....	4	469	—38	.....
1895, .....	4	594	+125	.....
1896, .....	4	569	—25	.....
1897, .....	4	533	—36	.....
1898, .....	4	668	+135	.....
1899, .....	4	670	+2	.....
1900, .....	4	161	—509	.....
1901, .....	4	160	—1	—423
NAILS AND SPIKES.				
1892, .....	10	3,015	.....	.....
1893, .....	10	2,840	—175	.....
1894, .....	10	2,305	—535	.....
1895, .....	10	2,422	+117	.....
1896, .....	10	1,891	—531	.....
1897, .....	10	1,714	—177	.....
1898, .....	10	2,099	+385	.....
1899, .....	10	2,360	+261	.....
1900, .....	10	2,647	+287	.....
1901, .....	10	1,607	—1,040	—1,408
NUTS AND BOLTS.				
1892, .....	2	615	.....	.....
1893, .....	2	695	+80	.....

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF PERSONS EMPLOYED, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Number of persons employed.	Increase (+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
NUTS AND BOLTS—Continued.				
1894, .....	2	560	—135	.....
1895, .....	2	638	+78	.....
1896, .....	2	530	—108	.....
1897, .....	2	576	+46	.....
1898, .....	2	758	+182	.....
1899, .....	2	955	+197	.....
1900, .....	2	1,268	+313	.....
1901, .....	2	1,021	—247	+406
PIPES AND TUBES.				
1892, .....	4	1,336	.....	.....
1893, .....	4	1,311	—25	.....
1894, .....	4	1,263	—48	.....
1895, .....	4	1,454	+191	.....
1896, .....	4	1,326	—128	.....
1897, .....	4	1,357	+31	.....
1898, .....	4	1,612	+255	.....
1899, .....	4	1,720	+108	.....
1900, .....	4	2,052	+332	.....
1901, .....	4	2,364	+312	+1,028
IRON FOUNDRIES AND MACHINE WORKS.				
1892, .....	25	3,554	.....	.....
1893, .....	25	3,097	—457	.....
1894, .....	25	2,603	—494	.....

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF PERSONS EMPLOYED, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Number of persons employed.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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IRON FOUNDRIES AND MA-  
CHINE WORKS—Continued.

1895, .....	25	3,066	+463	.....
1896, .....	25	2,794	—272	.....
1897, .....	25	3,602	+208	.....
1898, .....	25	3,417	+415	.....
1899, .....	25	4,091	+674	.....
1900, .....	25	4,113	+22	.....
1901, .....	25	4,477	+364	+923

STOVES, RANGES, HEATERS,  
ETC.

1892, .....	9	1,243	.....	.....
1893, .....	9	1,361	+118	.....
1894, .....	9	1,238	—123	.....
1895, .....	9	1,285	+47	.....
1896, .....	9	1,296	+11	.....
1897, .....	9	1,278	—18	.....
1898, .....	9	1,310	+32	.....
1899, .....	9	1,304	—6	.....
1900, .....	9	1,308	+4	.....
1901, .....	9	1,324	+16	+81

## HARDWARE.

1892, .....	4	1,560	.....	.....
1893, .....	4	1,544	—16	.....
1894, .....	4	1,464	—80	.....
1895, .....	4	1,586	+122	.....

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF PERSONS EMPLOYED, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Number of persons employed.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
HARWARE—Continued.				
1896, .....	4	1,464	—122	.....
1897, .....	4	1,569	+105	.. ...
1898, .....	4	1,695	+126	.....
1899, .....	4	1,926	+231	.....
1900, .....	4	1,706	—220	.....
1901, .....	4	1,751	+45	+191
MALLEABLE IRON.				
1892, .....	2	401	.....	.....
1893, .....	2	362	—39	.....
1894, .....	2	293	—69	.....
1895, .....	2	367	+74	.....
1896, .....	2	445	+78	.....
1897, .....	2	431	—14	.....
1898, .....	2	697	+266	.....
1899, .....	2	746	+49	.....
1900, .....	2	616	—130	.....
1901, .....	2	799	+183	+338
SAWS, EDGE TOOLS, ETC.				
1892, .....	5	2,448	.....	.....
1893, .....	5	2,210	—238	.....
1894, .....	5	1,965	—245	.....
1895, .....	5	2,188	+223	.....
1896, .....	5	2,171	—17	.....
1897, .....	5	2,126	—45	.....



## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF PERSONS EMPLOYED, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Number of persons employed.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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SAWS, EDGE TOOLS, ETC.—Con-  
tinued.

1898, .....	5	2,549	+423	.....
1899, .....	5	3,079	+530	.....
1900, .....	5	3,168	+89	.....
1901, .....	5	3,360	+192	+912

## METAL AND METALLIC GOODS.

1892, .....	8	1,726	.....	.....
1893, .....	8	1,622	—104	.....
1894, .....	8	1,500	—122	.....
1895, .....	8	1,704	+204	.....
1896, .....	8	1,640	—64	.....
1897, .....	8	1,515	—125	.....
1898, .....	8	1,609	+94	.....
1899, .....	8	1,809	+200	.....
1900, .....	8	1,628	—181	.....
1901, .....	8	1,622	—6	—104

## LOCOMOTIVES AND ENGINES.

1892, .....	14	11,591	.....	.....
1893, .....	14	11,644	+53	.....
1894, .....	14	8,441	—3,203	.....
1895, .....	14	9,363	+922	.....
1896, .....	14	10,228	+865	.....
1897, .....	14	10,038	—190	.....
1898, .....	14	12,397	+2,359	.....

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF PERSONS EMPLOYED, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Number of persons employed.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
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LOCOMOTIVES AND ENGINES—  
Continued.

1899, .....	14	14,795	+2,398	.....
1900, .....	14	17,523	+2,728	.....
1901, .....	14	19,058	+1,535	+7,467

## ENGINES AND BOILERS.

1892, .....	6	1,635	.....	.....
1893, .....	6	1,384	—251	.....
1894, .....	6	992	—392	.....
1895, .....	6	1,226	+234	.....
1896, .....	6	1,326	+100	.....
1897, .....	6	1,205	—121	.....
1898, .....	6	1,269	+64	.....
1899, .....	6	1,409	+140	.....
1900, .....	6	1,592	+183	.....
1901, .....	6	1,701	+109	+66

## BOILERS.

1892, .....	7	762	.....	.....
1893, .....	7	722	—40	.....
1894, .....	7	691	—31	.....
1895, .....	7	694	+3	.....
1896, .....	7	747	+53	.....
1897, .....	7	652	—95	.....
1898, .....	7	810	+158	.....
1899, .....	7	512	—298	.....

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF PERSONS EMPLOYED, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years	Number of es- tablish- ments consid- ered.	Number of persons employed.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
BOILERS—Continued.				
1900, .....	7	618	+106	.....
1901, .....	7	708	+90	—54
BRIDGES.				
1892, .....	4	1,217	.....	.....
1893, .....	4	971	—246	.....
1894, .....	4	647	—324	.....
1895, .....	4	970	+323	.....
1896, .....	4	738	—232	.....
1897, .....	4	630	—108	.....
1898, .....	4	757	+127	.....
1899, .....	4	975	+218	.....
1900, .....	4	1,492	+517	.....
1901, .....	4	1,459	—33	+242
CAR SPRINGS.				
1892, .....	1	207	.....	.....
1893, .....	1	187	—20	.....
1894, .....	1	108	—79	.....
1895, .....	1	107	—1	.....
1896, .....	1	115	+8	.....
1897, .....	1	125	+10	.....
1898, .....	1	140	+15	.....
1899, .....	1	177	+37	.....
1900, .....	1	174	—3	.....
1901, .....	1	178	+4	—29

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF PERSONS EMPLOYED, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Number of persons employed.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
CAR COUPLERS.				
1892, .....	1	663	.....	.....
1893, .....	1	570	—93	.....
1894, .....	1	416	—154	.....
1895, .....	1	606	—190	.....
1896, .....	1	976	+370	.....
1897, .....	1	813	—163	.....
1898, .....	1	783	—30	.....
1899, .....	1	905	+122	.....
1900, .....	1	875	—30	.....
1901, .....	1	810	—65	+147
CARS AND CAR WHEELS.				
1892, .....	8	3,566	.....	.....
1893, .....	8	3,144	—422	.....
1894, .....	8	2,830	—314	.....
1895, .....	8	2,887	+57	.....
1896, .....	8	2,841	—46	.....
1897, .....	8	2,661	—180	.....
1898, .....	8	3,572	+911	.....
1899, .....	8	3,184	—388	.....
1900, .....	8	3,260	+76	.....
1901, .....	8	3,334	+74	—232
WINDOW GLASS, BOTTLE AND TABLE GOODS.				
1892, .....	17	6,512	.....	.....
1893, .....	17	5,993	—519	.....



## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF PERSONS EMPLOYED, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Number of persons employed.	Increase(+) or decrease (—) as compared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
WINDOW GLASS, BOTTLE AND TABLE GOODS—Continued.				
1894, .....	17	5,152	—841	.....
1895, .....	17	6,195	+1,043	.....
1896, .....	17	4,868	—1,327	.....
1897, .....	17	4,993	+125	.....
1898, .....	17	5,572	+579	.....
1899, .....	17	5,979	+407	.....
1900, .....	17	5,732	—247	.....
1901, .....	17	5,367	—365	—1,145
SHIP BUILDING.				
1892, .....	1	440	.....	.....
1893, .....	1	583	+143	.....
1894, .....	1	395	—188	.....
1895, .....	1	336	—59	.....
1896, .....	1	516	+180	.....
1897, .....	1	388	—128	.....
1898, .....	1	810	+422	.....
1899, .....	1	915	+105	.....
1900, .....	1	900	—15	.....
1901, .....	1	731	—169	+291
PIANOS AND ORGANS.				
1892, .....	2	162	.....	.....
1893, .....	2	162	.....	.....
1894, .....	2	162	.....	.....

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF PERSONS EMPLOYED, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Number of persons employed.	Increase(+) or decrease (—) as compared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
PIANOS AND ORGANS—Con- tinued.				
1895, .....	2	142	—20	.....
1896, .....	2	126	—16	.....
1897, .....	2	125	—1	.....
1898, .....	2	127	+2	.....
1899, .....	2	120	—7	.....
1900, .....	2	171	+51	.....
1901, .....	2	171	.....	+9
RUBBER BOOTS AND SHOES.				
1892, .....	1	325	.....	.....
1893, .....	1	350	+25	.....
1894, .....	1	350	.....	.....
1895, .....	1	398	+48	.....
1896, .....	1	359	—39	.....
1897, .....	1	375	+16	.....
1898, .....	1	400	+25	.....
1899, .....	1	500	+100	.....
1900, .....	1	500	.....	.....
1901, .....	1	513	+13	+188
CARBONS.				
1892, .....	1	48	.....	.....
1893, .....	1	50	+2	.....
1894, .....	1	55	+5	.....
1895, .....	1	49	—6	.....
1896, .....	1	50	+1	.....

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF PERSONS EMPLOYED, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Number of persons employed.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
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## CARBONS—Continued.

1897, .....	1	50	.....	.....
1898, .....	1	50	.....	.....
1899, .....	1	38	—12	.....
1900, .....	1	37	—1	.....
1901, .....	(1	38	+1	—10

## CARPETS.

1892, .....	24	6,750	.....	.....
1893, .....	24	5,660	—1,090	.....
1894, .....	24	5,326	—334	.....
1895, .....	24	5,907	+581	.....
1896, .....	24	5,362	—545	.....
1897, .....	24	5,496	+134	.....
1898, .....	24	5,123	—373	.....
1899, .....	24	6,178	+1,055	.....
1900, .....	24	5,803	—375	.....
1901, .....	24	5,956	+153	—794

## WOOLEN YARNS.

1892, .....	10	1,865	.....	.....
1893, .....	10	1,471	—394	.....
1894, .....	10	1,148	—323	.....
1895, .....	10	1,616	+468	.....
1896, .....	10	1,331	—285	.....
1897, .....	10	1,476	+145	.....
1898, .....	10	1,513	+37	.....
1899, .....	10	1,706	+193	.....
1900, .....	10	2,128	+422	.....
1901, .....	10	1,959	—169	+94

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF PERSONS EMPLOYED, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Number of persons employed.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
COTTON YARNS.				
1892, .....	3	259	.....	.....
1893, .....	3	233	—26	.....
1894, .....	3	270	+37	.....
1895, .....	3	294	+24	.....
1896, .....	3	220	—74	.....
1897, .....	3	255	+35	.....
1898, .....	3	267	+12	.....
1899, .....	3	264	—3	.....
1900, .....	3	275	+11	.....
1901, .....	3	257	—18	—2
WORSTED YARNS.				
1892, .....	3	1,002	.....	.....
1893, .....	3	708	—294	.....
1894, .....	3	722	+14	.....
1895, .....	3	1,006	+284	.....
1896, .....	3	665	—341	.....
1897, .....	3	728	+63	.....
1898, .....	3	713	—15	.....
1899, .....	3	838	+125	.....
1900, .....	3	796	—42	.....
1901, .....	3	849	+53	—153
MISCELLANEOUS YARNS.				
1892, .....	9	544	.....	.....
1893, .....	9	477	—67	.....



## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF PERSONS EMPLOYED, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Number of persons employed.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
MISCELLANEOUS YARNS—Con- tinued.				
1894, .....	9	418	—59	.....
1895, .....	9	445	+27	.....
1896, .....	9	378	—67	.....
1897, .....	9	422	+44	.....
1898, .....	9	393	—29	.....
1899, .....	9	453	+60	.....
1900, .....	9	374	—79	.....
1901, .....	9	381	+7	—163
WOOLEN GOODS.				
1892, .....	16	5,573	.....	.....
1893, .....	16	4,926	—647	.....
1894, .....	16	4,856	—70	.....
1895, .....	16	5,405	+549	.....
1896, .....	16	3,933	—1,472	.....
1897, .....	16	4,121	+188	.....
1898, .....	16	4,136	+15	.....
1899, .....	16	4,350	+214	.....
1900, .....	16	4,520	+170	.....
1901, .....	16	4,544	+24	—1,029
COTTON GOODS.				
1892, .....	17	4,308	.....	.....
1893, .....	17	3,874	—434	.....
1894, .....	17	3,687	—187	.....

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF PERSONS EMPLOYED, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Number of persons employed.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
COTTON GOODS—Continued.				
1895, .....	17	3,925	+238	.....
1896, .....	17	3,894	—31	.....
1897, .....	17	4,173	+279	.....
1898, .....	17	4,246	+73	.....
1899, .....	17	4,296	+50	.....
1900, .....	17	4,013	—283	.....
1901, .....	17	3,850	—163	—458
COTTON AND WOOLEN GOODS.				
1892, .....	12	1,397	.....	.....
1893, .....	12	1,260	—137	.....
1894, .....	12	1,248	—12	.....
1895, .....	12	1,370	+122	.....
1896, .....	12	1,182	—188	.....
1897, .....	12	1,162	—20	.....
1898, .....	12	1,320	+158	.....
1899, .....	12	1,262	—58	.....
1900, .....	12	1,199	—63	.....
1901, .....	12	1,165	—34	—232
WORSTED GOODS.				
1892, .....	3	661	.....	.....
1893, .....	3	386	—275	.....
1894, .....	3	461	+75	.....
1895, .....	3	547	+86	.....
1896, .....	3	389	—158	.....

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF PERSONS EMPLOYED, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Number of persons employed.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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## WORSTED GOODS—Continued.

1897, .....	3	610	+221	.....
1898, .....	3	583	—27	.....
1899, .....	3	597	+14	.....
1900, .....	3	450	—147	.....
1901, .....	3	416	—34	—245

## KNIT GOODS.

1892, .....	5	989	.....	.....
1893, .....	5	973	—16	.....
1894, .....	5	807	—166	.....
1895, .....	5	1,051	+244	.....
1896, .....	5	973	—78	.....
1897, .....	5	1,010	+37	.....
1898, .....	5	980	—30	.....
1899, .....	5	1,004	+24	.....
1900, .....	5	1,268	+264	.....
1901, .....	5	1,064	—204	+75

## CHENILLE GOODS.

1892, .....	5	1,577	.....	.....
1893, .....	5	1,153	—424	.....
1894, .....	5	1,176	+23	.....
1895, .....	5	1,189	+13	.....
1896, .....	5	1,378	+189	.....
1897, .....	5	1,542	+164	.....
1898, .....	5	1,575	+33	.....

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF PERSONS EMPLOYED, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Number of persons employed.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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## CHENILLE GOODS—Continued.

1899, .....	5	1,614	+39	.....
1900, .....	5	1,463	—151	.....
1901, .....	5	1,492	+29	—85

## MIXED TEXTILES.

1892, .....	9	2,024	.....	.....
1893, .....	9	1,688	—336	.....
1894, .....	9	1,847	+159	.....
1895, .....	9	2,028	+181	.....
1896, .....	9	1,894	—134	.....
1897, .....	9	2,025	+131	.....
1898, .....	9	2,120	+95	.....
1899, .....	9	2,431	+311	.....
1900, .....	9	2,783	+352	.....
1901, .....	9	2,644	—139	+620

TAPESTRY AND TABLE  
COVERS.

1892, .....	3	225	.....	.....
1893, .....	3	187	—38	.....
1894, .....	3	229	+42	.....
1895, .....	3	326	+97	.....
1896, .....	3	296	—30	.....
1897, .....	3	393	+97	.....
1898, .....	3	462	+69	.....
1899, .....	3	492	+30	.....



## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF PERSONS EMPLOYED, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Number of persons employed.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
TAPESTRY AND TABLE COVERS—Continued.				
1900, .....	3	470	—22	.....
1901, .....	3	316	—154	+91
HOSIERY.				
1892, .....	13	2,944	.....	.....
1893, .....	13	2,647	—297	.....
1894, .....	13	2,589	—58	.....
1895, .....	13	3,329	+740	.....
1896, .....	13	2,708	—621	.....
1897, .....	13	3,012	+304	.....
1898, .....	13	3,212	+200	.....
1899, .....	13	3,204	—8	.....
1900, .....	13	3,116	—88	.....
1901, .....	13	2,900	—216	—44
HOSIERY AND KNIT GOODS.				
1892, .....	3	595	.....	.....
1893, .....	3	610	+15	.....
1894, .....	3	600	—10	.....
1895, .....	3	628	+28	.....
1896, .....	3	453	—175	.....
1897, .....	3	538	+85	.....
1898, .....	3	471	—67	.....
1899, .....	3	456	—15	.....
1900, .....	3	520	+64	.....
1901, .....	3	478	—42	—117

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF PERSONS EMPLOYED, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Number of persons employed.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
SILK BROAD GOODS.				
1892, .....	4	1,736	.....	.....
1893, .....	4	1,092	—644	.....
1894, .....	4	1,446	+354	.....
1895, .....	4	1,918	+472	.....
1896, .....	4	1,850	—68	.....
1897, .....	4	2,667	+817	.....
1898, .....	4	2,964	+297	.....
1899, .....	4	3,191	+227	.....
1900, .....	4	3,070	—121	.....
1901, .....	4	3,285	+215	+1,549

## AGGREGATE WAGES PAID.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

(In this table the aggregate wages paid by the same establishments for each of the years 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 and 1901 is presented, with the relative increase or decrease, together with the increase or decrease 1901 over 1892. Forty-four industries, representing 354 establishments, are considered.)

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Aggregate amount of wages paid.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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## PIG IRON.

1892, .....	13	\$1,222,091	.....	\$
1893, .....	13	968,289	—\$253,802	.....
1894, .....	13	658,393	—309,896	.....
1895, .....	13	1,060,012	+401,619	.....
1896, .....	13	947,503	—112,509	.....
1897, .....	13	797,839	—149,664	.....
1898, .....	13	950,759	+152,920	.....
1899, .....	13	1,502,193	+551,434	.....
1900, .....	13	1,393,893	—108,300	.....
1901, .....	13	1,418,147	+24,254	+196,056

ROLLING MILLS—GENERAL  
PRODUCT.

1892, .....	32	19,909,005	.....	.....
1893, .....	32	17,884,919	—2,024,086	.....
1894, .....	32	14,537,538	—3,347,381	.....
1895, .....	32	17,620,324	+3,082,786	.....
1896, .....	32	17,829,462	+209,138	.....
1897, .....	32	17,159,786	—669,676	.....

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Aggregate amount of wages paid.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
ROLLING MILLS—GENERAL PRODUCT—Continued.				
1898, .....	32	\$20,005,631	+\$2,845,845	\$
1899, .....	32	26,368,594	+6,362,963	.....
1900, .....	32	18,725,089	—7,643,505	.....
1901, .....	32	26,800,981	+8,075,892	+6,891,976
IRON AND STEEL SHEETS AND PLATES.				
1892, .....	14	3,225,444	.....	.....
1893, .....	14	2,658,514	—566,930	.....
1894, .....	14	2,251,379	—407,135	.....
1895, .....	14	2,728,209	+476,830	.....
1896, .....	14	2,390,653	—337,556	.....
1897, .....	14	2,569,347	+178,694	.....
1898, .....	14	3,402,674	+833,327	.....
1899, .....	14	4,781,188	+1,378,514	.....
1900, .....	14	4,387,581	—393,607	.....
1901, .....	14	5,458,771	+1,071,190	+2,233,327
PLATE AND BAR.				
1892, .....	3	1,685,275	.....	.....
1893, .....	3	1,150,276	—534,999	.....
1894, .....	3	696,970	—453,306	.....
1895, .....	3	864,145	+167,175	.....
1896, .....	3	596,165	—267,980	.....
1897, .....	3	626,280	+30,115	.....



## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate amount of wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
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## PLATE AND BAR—Continued.

1898, .....	3	\$1,082,343	+\$456,063	\$
1899, .....	3	1,391,372	+309,029	.....
1900, .....	3	1,190,369	—201,003	.....
1901, .....	3	1,022,587	—167,782	—662,688

## STEEL.

1892, .....	13	6,601,181	.....	.....
1893, .....	13	5,234,148	—1,367,033	.....
1894, .....	13	4,492,128	—742,020	.....
1895, .....	13	5,872,084	+1,379,956	.....
1896, .....	13	4,592,017	—1,028,067	.....
1897, .....	13	4,918,524	+326,507	.....
1898, .....	13	5,828,123	+909,599	.....
1899, .....	13	7,540,393	+1,712,270	.....
1900, .....	13	4,870,336	—2,670,057	.....
1901, .....	13	9,717,909	+4,847,573	+3,116,728

## ARCHITECTURAL CAST AND WROUGHT IRON WORK.

1892, .....	4	810,020	.....	.....
1893, .....	4	699,209	—110,811	.....
1894, .....	4	488,190	+211,019	.....
1895, .....	4	786,657	+298,467	.....
1896, .....	4	718,716	—67,941	.....
1897, .....	4	597,775	—120,941	.....
1898, .....	4	771,191	+173,416	.....

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate amount of wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
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ARCHITECTURAL CAST AND WROUGHT IRON WORK—Continued.

1899, .....	4	\$971,114	+\$199,923	\$
1900, .....	4	1,264,962	+293,848	.....
1901, .....	4	1,408,076	+143,114	+598,056

## IRON FORGING.

1892, .....	4	379,070	.....	.....
1893, .....	4	302,651	—76,419	.....
1894, .....	4	237,457	—65,194	.....
1895, .....	4	311,275	+73,818	.....
1896, .....	4	295,092	—16,183	.....
1897, .....	4	281,250	—13,842	.....
1898, .....	4	365,737	+84,487	.....
1899, .....	4	373,752	+8,015	.....
1900, .....	4	115,518	—258,234	.....
1901, .....	4	118,476	+2,958	—260,594

## NAILS AND SPIKES.

1892, .....	10	1,294,034	.....	.....
1893, .....	10	1,130,151	—163,883	.....
1894, .....	10	770,354	—359,797	.....
1895, .....	10	848,142	+77,778	.....
1896, .....	10	527,201	—320,941	.....
1897, .....	10	593,927	+66,726	.....
1898, .....	10	556,145	—37,782	.....

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate amount of wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
NAILS AND SPIKES—Continued.				
1899, .....	10	\$800,175	+\$244,030	\$
1900, .....	10	928,737	+128,562	.....
1901, .....	10	712,083	—216,654	—581,951
NUTS AND BOLTS.				
1892, .....	2	238,112	.....	.....
1893, .....	2	235,777	—2,335	.....
1894, .....	2	208,854	—26,923	.....
1895, .....	2	257,202	+48,348	.....
1896, .....	2	211,195	—46,007	.....
1897, .....	2	200,064	—11,131	.....
1898, .....	2	291,593	+91,529	.....
1899, .....	2	520,681	+229,088	.....
1900, .....	2	550,577	+29,896	.....
1901, .....	2	414,917	—135,660	+176,805
PIPES AND TUBES.				
1892, .....	4	575,531	.....	.....
1893, .....	4	519,129	—56,402	.....
1894, .....	4	513,268	—5,861	.....
1895, .....	4	646,083	+132,815	.....
1896, .....	4	658,449	+12,366	.....
1897, .....	4	642,407	—16,042	.....
1898, .....	4	769,577	+127,170	.....
1899, .....	4	831,654	+62,077	.....

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate amount of wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
PIPES AND TUBES—Continued.				
1900, .....	4	\$1,013,349	+\$181,695	\$
1901, .....	4	1,231,972	+218,623	+656,441
IRON FOUNDRIES AND MACHINE WORKS.				
1892, .....	25	1,967,645	.....	.....
1893, .....	25	1,533,465	—434,180	.....
1894, .....	25	1,313,309	—220,156	.....
1895, .....	25	1,571,056	+257,747	.....
1896, .....	25	1,384,299	—186,757	.....
1897, .....	25	1,513,104	+128,805	.....
1898, .....	25	1,800,212	+287,108	.....
1899, .....	25	2,198,285	+398,073	.....
1900, .....	25	2,312,981	+114,696	.....
1901, .....	25	2,540,406	+227,425	+572,761
STOVES, RANGES, HEATERS, ETC.				
1892, .....	9	630,622	.....	.....
1893, .....	9	674,514	+43,892	.....
1894, .....	9	526,222	—148,292	.....
1895, .....	9	575,802	+49,580	.....
1896, .....	9	559,614	—16,188	.....
1897, .....	9	574,595	+14,981	.....
1898, .....	9	595,133	+20,538	.....
1899, .....	9	635,413	+40,280	.....
1900, .....	9	660,164	+24,751	.....
1901, .....	9	663,735	+3,571	+33,113



## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate amount of wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
HARDWARE.				
1892, .....	4	\$608,700	\$	\$
1893, .....	4	581,468	—27,232	.....
1894, .....	4	494,538	—86,930	.....
1895, .....	4	589,411	+94,873	.....
1896, .....	4	506,748	—82,663	.....
1897, .....	4	555,295	+48,547	.....
1898, .....	4	575,798	+20,503	.....
1899, .....	4	753,877	+178,079	.....
1900, .....	4	568,061	—185,816	.....
1901, .....	4	698,125	+130,064	+89,425
MALLEABLE IRON.				
1892, .....	2	207,159	.....	.....
1893, .....	2	167,644	—39,515	.....
1894, .....	2	129,634	—38,010	.....
1895, .....	2	185,490	+55,856	.....
1896, .....	2	206,976	+21,486	.....
1897, .....	2	208,714	+1,738	.....
1898, .....	2	341,962	+133,248	.....
1899, .....	2	389,287	+47,325	.....
1900, .....	2	335,124	—54,163	.....
1901, .....	2	441,888	+106,764	+234,729
SAWS, EDGE TOOLS, ETC.				
1892, .....	5	1,306,442	.....	.....
1893, .....	5	1,166,262	—140,180	.....

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate amount of wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
SAWS, EDGE TOOLS, ETC—Continued.				
1894, .....	5	\$872,555	—\$293,707	\$
1895, .....	5	1,078,514	+205,959	.....
1896, .....	5	1,083,069	+4,555	.....
1897, .....	5	988,912	—94,157	.....
1898, .....	5	1,273,829	+284,917	.....
1899, .....	5	1,583,828	+309,999	.....
1900, .....	5	1,682,130	+98,302	.....
1901, .....	5	1,772,047	+89,917	+465,605
METAL AND METALLIC GOODS.				
1892, .....	8	833,385	.....	.....
1893, .....	8	738,036	—95,349	.....
1894, .....	8	675,524	—62,512	.....
1895, .....	8	829,877	+154,353	.....
1896, .....	8	812,633	—17,244	.....
1897, .....	8	712,676	—99,957	.....
1898, .....	8	762,480	+49,804	.....
1899, .....	8	896,108	+133,628	.....
1900, .....	8	837,203	—58,905	.....
1901, .....	8	824,729	—12,474	—8,656
LOCOMOTIVES AND ENGINES.				
1892, .....	14	6,941,946	.....	.....
1893, .....	14	6,528,803	—413,143	.....
1894, .....	14	4,032,489	—2,496,314	.....

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Aggregate amount of wages paid.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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LOCOMOTIVES AND ENGINES—  
Continued.

1895, .....	14	\$5,231,956	+\$1,199,467	\$
1896, .....	14	5,402,517	+170,561	.....
1897, .....	14	5,398,050	—4,467	.....
1898, .....	14	7,149,884	+1,751,834	.....
1899, .....	14	8,797,896	+1,648,012	.....
1900, .....	14	10,657,939	+1,860,043	.....
1901, .....	14	11,930,091	+1,272,152	+4,988,145

## ENGINES AND BOILERS.

1892, .....	6	820,391	.....	.....
1893, .....	6	658,487	—161,904	.....
1894, .....	6	521,260	—137,227	.....
1895, .....	6	647,889	+126,629	.....
1896, .....	6	647,307	—582	.....
1897, .....	6	552,180	—95,127	.....
1898, .....	6	639,408	+87,228	.....
1899, .....	6	728,062	+88,654	.....
1900, .....	6	838,696	+110,634	.....
1901, .....	6	903,156	+64,460	+82,765

## BOILERS.

1892, .....	7	394,594	.....	.....
1893, .....	7	285,385	—109,209	.....
1894, .....	7	220,692	—64,693	.....
1895, .....	7	253,044	+32,352	.....

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate amount of wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
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## BOILERS—Continued.

1896, .....	7	\$231,665	—\$21,379	\$
1897, .....	7	236,863	+5,198	.....
1898, .....	7	298,175	+61,312	.....
1899, .....	7	237,840	—60,335	.....
1900, .....	7	291,905	+54,065	.....
1901, .....	7	342,918	+51,013	—51,676

## BRIDGES.

1892, .....	4	532,673	.....	.....
1893, .....	4	413,517	—119,156	.....
1894, .....	4	262,240	—151,277	.....
1895, .....	4	450,391	+188,151	.....
1896, .....	4	293,005	—157,386	.....
1897, .....	4	275,270	—17,735	.....
1898, .....	4	333,277	+53,007	.....
1899, .....	4	408,803	+75,526	.....
1900, .....	4	847,340	+438,537	.....
1901, .....	4	807,450	—39,890	+274,777

## CAR SPRINGS.

1892, .....	1	139,800	.....	.....
1893, .....	1	104,498	—35,302	.....
1894, .....	1	49,664	—54,834	.....
1895, .....	1	67,556	+17,892	.....
1896, .....	1	76,031	+8,475	.....
1897, .....	1	69,144	—6,887	.....
1898, .....	1	95,162	+26,018	.....



## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate amount of wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
CAR SPRINGS—Continued.				
1899, .....	1	\$129,115	+\$33,953	\$
1900, .....	1	136,336	+7,221	.....
1901, .....	1	146,451	+10,115	+6,651
CAR COUPLERS.				
1892, .....	1	361,338	.....	.....
1893, .....	1	281,375	—79,963	.....
1894, .....	1	160,978	—120,397	.....
1895, .....	1	304,785	+143,807	.....
1896, .....	1	436,177	+131,392	.....
1897, .....	1	371,800	—64,377	.....
1898, .....	1	351,902	—19,898	.....
1899, .....	1	449,000	+97,098	.....
1900, .....	1	441,925	—7,075	.....
1901, .....	1	393,000	—48,925	+31,662
CARS AND CAR WHEELS.				
1892, .....	8	1,901,062	.....	.....
1893, .....	8	1,579,523	—321,539	.....
1894, .....	8	1,292,310	—287,213	.....
1895, .....	8	1,533,033	+240,723	.....
1896, .....	8	1,363,150	—169,883	.....
1897, .....	8	1,335,463	—27,687	.....
1898, .....	8	1,912,759	+577,296	.....
1899, .....	8	1,763,251	—149,508	.....
1900, .....	8	1,827,031	+63,780	.....
1901, .....	8	1,880,715	+53,684	—20,347

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate amount of wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
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WINDOW GLASS, BOTTLE AND  
TABLE GOODS.

1892, .....	17	\$3,013,108	\$	\$
1893, .....	17	2,209,369	—803,739	.....
1894, .....	17	2,219,127	+9,758	.....
1895, .....	17	2,198,916	—20,211	.....
1896, .....	17	1,903,683	—295,233	.....
1897, .....	17	2,257,805	+354,122	.....
1898, .....	17	2,525,933	+268,128	.....
1899, .....	17	2,726,527	+200,594	.....
1900, .....	17	2,470,306	—256,221	.....
1901, .....	17	2,471,234	+928	—541,874

## SHIP BUILDING.

1892, .....	1	242,358	.....	.....
1893, .....	1	324,439	+82,081	.....
1894, .....	1	226,858	—97,581	.....
1895, .....	1	190,820	—36,038	.....
1896, .....	1	285,103	+94,283	.....
1897, .....	1	215,604	—69,499	.....
1898, .....	1	397,489	+181,885	.....
1899, .....	1	483,200	+85,711	.....
1900, .....	1	449,335	—33,865	.....
1901, .....	1	365,911	—83,424	+123,553

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments considered.	Aggregate amount of wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease(—) 1901 as compared with 1892.
PIANOS AND ORGANS.				
1892, .....	2	\$53,972	\$	\$
1893, .....	2	50,583	—3,389	.....
1894, .....	2	46,187	—4,396	.....
1895, .....	2	49,644	+3,457	.....
1896, .....	2	51,392	+1,748	.....
1897, .....	2	52,502	+1,110	.....
1898, .....	2	54,027	+1,525	.....
1899, .....	2	53,303	—724	.....
1900, .....	2	72,290	+18,987	.....
1901, .....	2	74,851	+2,561	+20,879
RUBBER BOOTS AND SHOES.				
1892, .....	1	141,784	.....	.....
1893, .....	1	145,471	+3,687	.....
1894, .....	1	128,156	—17,315	.....
1895, .....	1	150,705	+22,549	.....
1896, .....	1	131,577	—19,128	.....
1897, .....	1	103,639	—27,938	.....
1898, .....	1	139,770	+36,131	.....
1899, .....	1	175,816	+36,106	.....
1900, .....	1	174,134	—1,742	.....
1901, .....	1	182,887	+8,753	+41,103
CARBONS.				
1892, .....	1	25,000	.....	.....
1893, .....	1	27,000	+2,000	.....

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate amount of wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
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## CARBONS—Continued.

1894, .....	1	\$29,000	+\$2,000	\$
1895, .....	1	28,000	—1,000	.....
1896, .....	1	24,000	—4,000	.....
1897, .....	1	24,000	.....	.....
1898, .....	1	24,000	.....	.....
1899, .....	1	20,240	—3,760	.....
1900, .....	1	18,559	—1,681	.....
1901, .....	1	19,394	+835	—5,606

## CARPETS.

1892, .....	24	2,573,458	.....	.....
1893, .....	24	2,085,404	—488,054	.....
1894, .....	24	1,002,657	—1,082,747	.....
1895, .....	24	2,228,021	+1,225,364	.....
1896, .....	24	1,830,621	—397,400	.....
1897, .....	24	1,983,366	+152,745	.....
1898, .....	24	1,824,963	—158,403	.....
1899, .....	24	2,307,694	+482,731	.....
1900, .....	24	2,232,351	—75,343	.....
1901, .....	24	2,321,117	+88,766	—252,341

## WOOLEN YARNS.

1892, .....	10	527,864	.....	.....
1893, .....	10	428,848	—99,016	.....
1894, .....	10	286,557	—142,291	.....
1895, .....	10	424,006	+137,449	.....



## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Aggregate amount of wages paid.	Increase (+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease (—) 1901 as compared with 1892.
WOOLEN YARNS—Continued.				
1896, .....	10	\$408,385	—\$15,621	\$
1897, .....	10	384,803	—23,582	.....
1898, .....	10	461,866	+77,063	.....
1899, .....	10	524,527	+62,661	.....
1900, .....	10	656,246	+131,719	.....
1901, .....	10	610,422	—45,824	+82,558
COTTON YARNS.				
1892, .....	3	84,571	.....	.....
1893, .....	3	71,384	—13,187	.....
1894, .....	3	70,983	—401	.....
1895, .....	3	89,806	+18,823	.....
1896, .....	3	63,476	—26,330	.....
1897, .....	3	78,009	+14,533	.....
1898, .....	3	82,051	+4,042	.....
1899, .....	3	87,040	+4,989	.....
1900, .....	3	93,589	+6,549	.....
1901, .....	3	88,159	—5,430	+3,588
WORSTED YARNS.				
1892, .....	3	298,181	.....	.....
1893, .....	3	211,833	—86,348	.....
1894, .....	3	201,584	—10,249	.....
1895, .....	3	278,890	+77,306	.....
1896, .....	3	157,080	—121,810	.....
1897, .....	3	201,321	+44,241	.....

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Aggregate amount of wages paid.	Increase(+) or decrease (-) as com- pared with the preced- ing year.	Increase (+) or de- crease(-) 1901 as compared with 1892.
WORSTED YARNS—Continued.				
1898, .....	3	\$175,310	—\$26,011	\$
1899, .....	3	239,566	+64,256	.....
1900, .....	3	235,574	—3,992	.....
1901, .....	3	238,632	+3,058	—59,549
MISCELLANEOUS YARNS.				
1892, .....	9	212,052	.....	.....
1893, .....	9	150,765	—61,287	.....
1894, .....	9	138,072	—12,693	.....
1895, .....	9	159,564	+21,492	.....
1896, .....	9	130,224	—29,340	.....
1897, .....	9	156,864	+26,640	.....
1898, .....	9	133,248	—23,616	.....
1899, .....	9	171,356	+38,108	.....
1900, .....	9	150,158	—21,198	.....
1901, .....	9	156,599	+6,441	—55,453
WOOLEN GOODS.				
1892, .....	16	1,953,364	.....	.....
1893, .....	16	1,527,984	—425,380	.....
1894, .....	16	1,388,781	—139,203	.....
1895, .....	16	1,694,440	+305,659	.....
1896, .....	16	1,199,111	—495,329	.....
1897, .....	16	1,363,041	+163,930	.....
1898, .....	16	1,384,116	+21,075	.....
1899, .....	16	1,498,231	+114,115	.....

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate amount of wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
WOOLEN GOODS—Continued.				
1900, .....	16	\$1,640,171	+\$141,940	\$
1901, .....	16	1,610,162	—30,009	—343,202
COTTON GOODS.				
1892, .....	17	1,656,805	.....	.....
1893, .....	17	1,186,610	—470,195	.....
1894, .....	17	1,171,554	—15,056	.....
1895, .....	17	1,303,844	+132,290	.....
1896, .....	17	1,064,130	—239,714	.....
1897, .....	17	1,251,253	+187,123	.....
1898, .....	17	1,373,237	+121,984	.....
1899, .....	17	1,508,218	+134,981	.....
1900, .....	17	1,367,545	—140,673	.....
1901, .....	17	1,357,230	—10,315	—299,575
COTTON AND WOOLEN GOODS.				
1892, .....	12	483,504	.....	.....
1893, .....	12	390,597	—92,907	.....
1894, .....	12	362,164	—28,433	.....
1895, .....	12	420,075	+57,911	.....
1896, .....	12	338,900	—81,175	.....
1897, .....	12	359,586	+20,686	.....
1898, .....	12	416,500	+56,914	.....
1899, .....	12	407,698	—8,802	.....
1900, .....	12	388,539	—19,159	.....
1901, .....	12	362,067	—26,472	—121,437

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Aggregate amount of wages paid.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
WORSTED GOODS.				
1892, .....	3	\$239,858	\$	\$
1893, .....	3	135,561	—104,297	.....
1894, .....	3	158,743	+23,182	.....
1895, .....	3	192,633	+33,890	.....
1896, .....	3	132,290	—60,343	.....
1897, .....	3	256,513	+124,223	.....
1898, .....	3	244,146	—12,367	.....
1899, .....	3	242,183	—1,963	.....
1900, .....	3	186,074	—56,109	.....
1901, .....	3	173,828	—12,246	—66,030
KNIT GOODS.				
1892, .....	5	286,648	.....	.....
1893, .....	5	255,438	—31,210	.....
1894, .....	5	205,732	—49,706	.....
1895, .....	5	288,841	+83,109	.....
1896, .....	5	228,053	—60,788	.....
1897, .....	5	247,615	+19,562	.....
1898, .....	5	247,184	—431	.....
1899, .....	5	288,434	+41,250	.....
1900, .....	5	316,613	+28,179	.....
1901, .....	5	245,641	—70,972	—41,007
CHENILLE GOODS.				
1892, .....	5	648,492	.....	.....
1893, .....	5	435,761	—212,731	.....



## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Aggregate amount of wages paid.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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## CHENILLE GOODS—Continued.

1894, .....	5	\$442,828	+\$7,067	\$
1895, .....	5	460,319	+17,491	.....
1896, .....	5	501,772	+41,453	.....
1897, .....	5	575,861	+74,089	.....
1898, .....	5	561,012	—14,849	.....
1899, .....	5	679,963	+118,951	.....
1900, .....	5	588,939	—91,024	.....
1901, .....	5	625,897	+36,958	—22,595

## MIXED TEXTILES.

1892, .....	9	712,059	.....	.....
1893, .....	9	520,683	—191,376	.....
1894, .....	9	531,680	+10,997	.....
1895, .....	9	615,095	+83,415	.....
1896, .....	9	559,443	—55,652	.....
1897, .....	9	591,656	+32,213	.....
1898, .....	9	632,258	+40,602	.....
1899, .....	9	765,896	+133,638	.....
1900, .....	9	857,228	+91,332	.....
1901, .....	9	830,012	—27,216	+117,953

TAPESTRY AND TABLE  
COVERS.

1892, .....	3	94,620	.....	.....
1893, .....	3	68,484	—26,136	.....
1894, .....	3	91,722	+23,238	.....

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Aggregate amount of wages paid.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
TAPESTRY AND TABLE COVERS—Continued.				
1895, .....	3	\$124,723	+\$33,001	\$
1896, .....	3	115,266	—9,457	.....
1897, .....	3	161,275	+46,009	.....
1898, .....	3	180,225	+18,950	.....
1899, .....	3	189,321	+9,096	.....
1900, .....	3	196,420	+7,099	.....
1901, .....	3	134,625	—61,795	+40,005
HOSIERY.				
1892, .....	13	770,891	.....	.....
1893, .....	13	660,803	—110,088	.....
1894, .....	13	567,411	—93,392	.....
1895, .....	13	863,884	+296,473	.....
1896, .....	13	632,065	—231,819	.....
1897, .....	13	773,370	+141,305	.....
1898, .....	13	807,402	+34,032	.....
1899, .....	13	809,834	+2,432	.....
1900, .....	13	839,341	+29,507	.....
1901, .....	13	793,487	—45,854	+22,596
HOSIERY AND KNIT GOODS.				
1892, .....	3	197,312	.....	.....
1893, .....	3	186,860	—10,452	.....
1894, .....	3	191,806	+4,946	.....
1895, .....	3	179,494	—12,312	.....
1896, .....	3	105,220	—74,274	.....

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Aggregate amount of wages paid.	Increase (+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease (—) 1901 as compared with 1892.
HOSIERY AND KNIT GOODS— Continued.				
1897, .....	3	\$148,908	+\$43,688	\$
1898, .....	3	134,120	—14,788	.....
1899, .....	3	142,663	+8,543	.....
1900, .....	3	151,853	+9,190	.....
1901, .....	3	147,857	—3,996	—49,455
SILK BROAD GOODS.				
1892, .....	4	430,455	.....	.....
1893, .....	4	248,372	—182,083	.....
1894, .....	4	362,119	+113,747	.....
1895, .....	4	449,854	+87,735	.....
1896, .....	4	470,930	+21,076	.....
1897, .....	4	632,685	+161,755	.....
1898, .....	4	724,004	+91,319	.....
1899, .....	4	805,682	+81,678	.....
1900, .....	4	734,974	—70,708	.....
1901, .....	4	761,327	+26,353	+330,872

## AVERAGE YEARLY EARNINGS.

COMPARISON OF AVERAGE YEARLY EARNINGS IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

(In this table the average yearly earnings in same establishments for each of the years 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 and 1901 presented, with the relative increase or decrease, together with the increase or decrease 1901 over 1892. Forty-four industries, representing 354 establishments, are considered.)

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earnings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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## PIG IRON.

1892, .....	13	\$477 92	\$	\$
1893, .....	13	446 14	—31 78	.....
1894, .....	13	382 09	—64 05	.....
1895, .....	13	483 66	+101 57	.....
1896, .....	13	422 61	—61 05	.....
1897, .....	13	419 03	—3 58	.....
1898, .....	13	447 63	+28 60	.....
1899, .....	13	498 24	+50 61	.....
1900, .....	13	455 97	—42 27	.....
1901, .....	13	576 72	+120 75	+98 80

ROLLING MILLS—GENERAL  
PRODUCT.

1892, .....	32	562 91	.....	.....
1893, .....	32	547 02	—15 89	.....
1894, .....	32	482 65	—64 37	.....
1895, .....	32	501 65	+19 00	.....
1896, .....	32	513 00	+11 35	.....
1897, .....	32	482 30	—30 70	.....
1898, .....	32	497 96	+15 66	.....



## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average yearly earnings.	Increase(+) or decrease(−) as compared with the preceding year.	Increase(+) or decrease(−) 1901 as compared with 1892.
ROLLING MILLS—GENERAL PRODUCT—Continued.				
1899, .....	32	\$605 72	+\$107 76	\$
1900, .....	32	626 82	+21 10	.....
1901, .....	32	692 10	+65 28	+129 19
IRON AND STEEL SHEETS AND PLATES.				
1892, .....	14	633 81	.....	.....
1893, .....	14	579 19	−54 62	.....
1894, .....	14	524 31	−54 88	.....
1895, .....	14	560 32	+36 01	.....
1896, .....	14	528 67	−31 65	.....
1897, .....	14	493 63	−35 04	.....
1898, .....	14	521 56	+27 93	.....
1899, .....	14	574 18	+52 62	.....
1900, .....	14	556 52	−17 66	.....
1901, .....	14	577 28	+20 76	−56 53
PLATE AND BAR.				
1892, .....	3	515 53	.....	.....
1893, .....	3	493 68	−21 85	.....
1894, .....	3	401 71	−91 97	.....
1895, .....	3	381 86	−19 85	.....
1896, .....	3	460 36	+78 50	.....
1897, .....	3	460 50	+14	.....
1898, .....	3	456 30	−4 20	.....

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average yearly earnings.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
PLATE AND BAR—Continued.				
1899, .....	3	\$513 21	+\$56 91	\$
1900, .....	3	432 55	—80 66	.....
1901, .....	3	641 12	+208 57	+125 59
STEEL.				
1892, .....	13	504 87	.....	.....
1893, .....	13	494 49	—10 38	.....
1894, .....	13	459 41	—35 08	.....
1895, .....	13	483 78	+24 37	.....
1896, .....	13	456 55	—27 23	.....
1897, .....	13	474 71	+18 16	.....
1898, .....	13	478 66	+3 95	.....
1899, .....	13	517 24	+38 58	.....
1900, .....	13	598 47	+81 23	.....
1901, .....	13	555 94	—42 53	+51 07
ARCHITECTURAL CAST AND WROUGHT IRON WORKS.				
1892, .....	4	600 01	.....	.....
1893, .....	4	581 70	—18 31	.....
1894, .....	4	500 19	—81 51	.....
1895, .....	4	547 05	+46 86	.....
1896, .....	4	553 71	+6 66	.....
1897, .....	4	550 44	—3 27	.....
1898, .....	4	537 42	—13 02	.....
1899, .....	4	553 34	+15 92	.....
1900, .....	4	545 01	—8 33	.....
1901, .....	4	541 36	—3 65	—58 65

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earnings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
IRON FORGING.				
1892, .....	4	\$650 21	\$	\$
1893, .....	4	596 95	—53 26	.....
1894, .....	4	506 31	—90 64	.....
1895, .....	4	524 03	+17 72	.....
1896, .....	4	518 62	—5 41	.....
1897, .....	4	527 67	+9 05	.....
1898, .....	4	547 51	+19 84	.....
1899, .....	4	557 84	+10 33	.....
1900, .....	4	717 50	+159 66	.....
1901, .....	4	740 47	+22 97	+90 26
NAILS AND SPIKES.				
1892, .....	10	429 19	.....	.....
1893, .....	10	397 94	—31 25	.....
1894, .....	10	334 21	—63 73	.....
1895, .....	10	350 18	+15 97	.....
1896, .....	10	278 79	—71 39	.....
1897, .....	10	346 52	+67 73	.....
1898, .....	10	264 96	—81 56	.....
1899, .....	10	339 06	+74 10	.....
1900, .....	10	350 86	+11 80	.....
1901, .....	10	443 11	+92 25	+13 92
NUTS AND BOLTS.				
1892, .....	2	387 17	.....	.....
1893, .....	2	339 24	—47 93	.....

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earnings.	Increase(+) or decrease (—) as compared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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## NUTS AND BOLTS—Continued.

1894, .....	2	\$372 95	+\$33 71	\$
1895, .....	2	403 13	+30 18	.....
1896, .....	2	398 48	—4 65	.....
1897, .....	2	347 33	—51 15	.....
1898, .....	2	384 69	+37 36	.....
1899, .....	2	545 22	+160 53	.....
1900, .....	2	434 21	—111 01	.....
1901, .....	2	406 38	—27 83	+19 21

## PIPES AND TUBES.

1892, .....	4	430 78	.....	.....
1893, .....	4	395 98	—34 80	.....
1894, .....	4	406 38	+10 40	.....
1895, .....	4	444 34	+37 96	.....
1896, .....	4	421 15	—23 19	.....
1897, .....	4	473 40	+52 25	.....
1898, .....	4	477 41	+4 01	.....
1899, .....	4	483 52	+6 11	.....
1900, .....	4	493 83	+10 31	.....
1901, .....	4	521 14	+27 31	+90 36

## IRON FOUNDRIES AND MACHINE WORKS.

1892, .....	25	553 64	.....	.....
1893, .....	25	495 14	—58 50	.....
1894, .....	25	504 53	+9 39	.....



## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earnings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
IRON FOUNDRIES AND MACHINE WORKS—Continued.				
1895, .....	25	\$512 41	+\$7 88	\$
1896, .....	25	495 45	—16 96	.....
1897, .....	25	504 03	+8 58	.....
1898, .....	25	526 84	+22 81	.....
1899, .....	25	537 35	+10 51	.....
1900, .....	25	562 36	+25 01	.....
1901, .....	25	567 43	+5 07	+13 79
STOVES, RANGES, HEATERS, ETC.				
1892, .....	9	507 34	.....	.....
1893, .....	9	496 33	—11 01	.....
1894, .....	9	425 06	—71 27	.....
1895, .....	9	448 09	+23 03	.....
1896, .....	9	431 80	—16 29	.....
1897, .....	9	448 97	+17 17	.....
1898, .....	9	454 30	+5 33	.....
1899, .....	9	487 28	+32 98	.....
1900, .....	9	504 71	+17 43	.....
1901, .....	9	501 31	—3 40	—6 03
HARDWARE.				
1892, .....	4	388 94	.....	.....
1893, .....	4	376 59	—12 35	.....
1894, .....	4	337 79	—38 80	.....
1895, .....	4	371 63	+33 84	.....

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earnings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
HARDWARE—Continued.				
1896, .....	4	\$346 14	—\$25 49	\$
1897, .....	4	353 98	+7 84	.....
1898, .....	4	330 70	—14 28	.....
1899, .....	4	391 42	+51 72	.....
1900, .....	4	332 98	—58 44	.....
1901, .....	4	398 70	+65 72	+9 76
MAILEABLE IRON.				
1892, .....	2	516 61	.....	.....
1893, .....	2	463 11	—53 50	.....
1894, .....	2	442 44	—20 67	.....
1895, .....	2	505 42	+62 98	.....
1896, .....	2	465 11	—40 31	.....
1897, .....	2	484 25	+19 14	.....
1898, .....	2	490 62	+6 37	.....
1899, .....	2	521 83	+31 21	.....
1900, .....	2	544 03	+22 20	.....
1901, .....	2	553 05	+9 02	+36 44
SAWS, EDGE TOOLS, ETC.				
1892, .....	5	533 68	.....	.....
1893, .....	5	527 72	—5 96	.....
1894, .....	5	444 05	—83 67	.....
1895, .....	5	538 62	+94 57	.....
1896, .....	5	498 88	—39 74	.....
1897, .....	5	465 15	—33 73	.....

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments considered.	Average yearly earnings.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease(—) 1901 as compared with 1892.
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## SAWS, EDGE TOOLS, ETC.—Continued.

1898, .....	5	\$499 74	+\$34 59	\$
1899, .....	5	514 40	+14 66	.....
1900, .....	5	530 97	+16 57	.....
1901, .....	5	527 39	—3 58	—6 29

## METAL AND METALLIC GOODS.

1892, .....	8	482 84	.....	.....
1893, .....	8	455 02	—27 82	.....
1894, .....	8	450 35	—4 67	.....
1895, .....	8	487 02	+36 67	.....
1896, .....	8	495 51	+8 49	.....
1897, .....	8	470 41	—25 10	.....
1898, .....	8	473 88	+3 47	.....
1899, .....	8	495 36	+21 48	.....
1900, .....	8	514 25	+18 89	.....
1901, .....	8	508 46	—5 79	+25 62

## LOCOMOTIVES AND ENGINES.

1892, .....	14	598 90	.....	.....
1893, .....	14	560 70	—38 20	.....
1894, .....	14	477 72	—82 98	.....
1895, .....	14	558 79	+81 07	.....
1896, .....	14	528 21	—30 58	.....
1897, .....	14	537 76	+9 55	.....
1898, .....	14	576 74	+38 98	.....

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earnings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
LOCOMOTIVES AND ENGINES— Continued.				
1899, .....	14	\$594 65	+\$17 91	\$
1900, .....	14	608 22	+13 57	.....
1901, .....	14	625 99	+17 77	+27 09
ENGINES AND BOILERS.				
1892, .....	6	536 72	.....	.....
1893, .....	6	510 03	—26 69	.....
1894, .....	6	528 49	+18 46	.....
1895, .....	6	533 66	+5 17	.....
1896, .....	6	488 16	—45 50	.....
1897, .....	6	458 24	—29 92	.....
1898, .....	6	503 87	+45 63	.....
1899, .....	6	516 72	+12 85	.....
1900, .....	6	526 82	+10 10	.....
1901, .....	6	530 96	+4 14	—5 76
BOILERS.				
1892, .....	7	419 41	.....	.....
1893, .....	7	393 67	—25 74	.....
1894, .....	7	319 23	—74 44	.....
1895, .....	7	364 61	+45 38	.....
1896, .....	7	310 13	—54 48	.....
1897, .....	7	363 29	+53 16	.....
1898, .....	7	368 12	+4 83	.....
1899, .....	7	464 53	+96 41	.....
1900, .....	7	472 34	+7 81	.....
1901, .....	7	484 35	+12 01	+64 94



## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earnings.	Increase (+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease (—) 1901 as compared with 1892.
BRIDGES.				
1892, .....	4	\$437 69	\$	\$
1893, .....	4	425 86	—11 83	.....
1894, .....	4	405 31	—20 55	.....
1895, .....	4	464 32	+59 01	.....
1896, .....	4	397 03	—67 29	.....
1897, .....	4	436 94	+39 91	.....
1898, .....	4	440 26	+3 32	.....
1899, .....	4	419 29	—20 97	.....
1900, .....	4	567 92	+148 63	.....
1901, .....	4	553 43	—14 49	+115 74
CAR SPRINGS.				
1892, .....	1	675 36	.....	.....
1893, .....	1	558 81	—116 55	.....
1894, .....	1	459 85	—98 96	.....
1895, .....	1	631 36	+171 51	.....
1896, .....	1	661 14	+29 78	.....
1897, .....	1	553 15	—7 99	.....
1898, .....	1	679 73	+126 58	.....
1899, .....	1	729 46	+49 73	.....
1900, .....	1	783 54	+54 08	.....
1901, .....	1	822 76	+39 22	+147 40
CAR COUPLERS.				
1892, .....	1	545 00	.....	.....
1893, .....	1	493 64	—51 36	.....

AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earnings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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CAR COUPLERS—Continued.

1894, .....	1	\$386 96	—\$106 68	\$
1895, .....	1	502 94	+115 98	.....
1896, .....	1	446 90	—56 04	.....
1897, .....	1	457 32	+10 42	.....
1898, .....	1	449 43	—7 89	.....
1899, .....	1	496 13	+46 70	.....
1900, .....	1	505 06	+8 93	.....
1901, .....	1	485 19	—19 87	—59 81

CAR AND CAR WHEELS.

1892, .....	8	533 11	.....	.....
1893, .....	8	502 39	—30 72	.....
1894, .....	8	456 65	—45 74	.....
1895, .....	8	531 01	+74 36	.....
1896, .....	8	479 81	—51 20	.....
1897, .....	8	501 87	+22 06	.....
1898, .....	8	535 49	+33 62	.....
1899, .....	8	553 78	+18 29	.....
1900, .....	8	560 44	+6 66	.....
1901, .....	8	564 10	+3 66	+30 99

WINDOW GLASS, BOTTLE AND  
TABLE GOODS.

1892, .....	17	462 70	.....	.....
1893, .....	17	368 66	—94 04	.....
1894, .....	17	430 73	+62 07	.....

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earnings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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WINDOW GLASS, BOTTLES AND  
TABLE GOODS—Continued.

1895, .....	17	\$354 95	—\$75 78	\$
1896, .....	17	391 06	+36 11	.....
1897, .....	17	452 19	+61 13	.....
1898, .....	17	453 33	+1 14	.....
1899, .....	17	456 02	+2 69	.....
1900, .....	17	430 97	—25 05	.....
1901, .....	17	460 45	+29 48	—2 25

## SHIP BUILDING.

1892, .....	1	550 80	.....	.....
1893, .....	1	556 49	+5 69	.....
1894, .....	1	571 32	+17 83	.....
1895, .....	1	567 91	—6 41	.....
1896, .....	1	552 52	—15 39	.....
1897, .....	1	555 68	+3 16	.....
1898, .....	1	490 73	—64 95	.....
1899, .....	1	528 09	+37 36	.....
1900, .....	1	499 26	—28 83	.....
1901, .....	1	500 56	+1 30	—50 24

## PIANOS AND ORGANS.

1892, .....	2	336 16	.....	.....
1893, .....	2	312 24	—23 92	.....
1894, .....	2	285 10	—27 14	... ..
1895, .....	2	349 61	+64 51	.....

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average yearly earnings.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
PIANOS AND ORGANS—Continued.				
1896, .....	2	\$407 87	+\$58 26	\$
1897, .....	2	420 02	+12 15	.....
1898, .....	2	425 41	+5 39	.....
1899, .....	2	444 19	+18 78	.....
1900, .....	2	422 75	—21 44	.....
1901, .....	2	437 73	+14 98	+101 57
RUBBER BOOTS AND SHOES.				
1892, .....	1	436 25	.....	.....
1893, .....	1	415 63	—20 62	.....
1894, .....	1	366 16	—49 47	.....
1895, .....	1	378 65	+12 49	.....
1896, .....	1	338 66	—39 99	.....
1897, .....	1	276 37	—62 29	.....
1898, .....	1	349 43	+73 06	.....
1899, .....	1	351 75	+2 32	.....
1900, .....	1	348 27	—3 48	.....
1901, .....	1	356 50	+8 23	—79 75
CARBONS.				
1892, .....	1	520 83	.....	.....
1893, .....	1	540 00	+19 17	.....
1894, .....	1	527 28	—12 72	.....
1895, .....	1	571 43	+44 15	.....
1896, .....	1	480 00	—91 43	.....



## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earnings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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## CARBONS—Continued.

1897, .....	1	\$480 00	\$	\$
1898, .....	1	480 00	.....	.....
1899, .....	1	532 63	+52 63	.....
1900, .....	1	501 60	—31 03	.....
1901, .....	1	510 37	+8 77	—10 46

## CARPETS.

1892, .....	24	381 24	.....	.....
1893, .....	24	368 45	—12 79	.....
1894, .....	24	355 30	—13 15	.....
1895, .....	24	374 48	+19 18	.....
1896, .....	24	341 41	—33 07	.....
1897, .....	24	360 88	+19 47	.....
1898, .....	24	356 23	—4 65	.....
1899, .....	24	373 53	+17 30	.....
1900, .....	24	384 69	+11 16	.....
1901, .....	24	389 71	+5 02	+8 47

## WOOLEN YARNS.

1892, .....	10	283 03	.....	.....
1893, .....	10	291 53	+8 50	.....
1894, .....	10	249 61	—41 92	.....
1895, .....	10	262 38	+12 77	.....
1896, .....	10	306 83	+44 45	.....
1897, .....	10	260 71	—46 12	.....
1898, .....	10	305 26	+44 55	.....

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earnings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
1899, .....	10	\$307 46	+\$2 20	\$
1900, .....	10	308 39	+93	.....
1901, .....	10	311 60	+3 21	+28 57
COTTON YARNS.				
1892, .....	3	326 53	.....	.....
1893, .....	3	306 36	—20 17	.....
1894, .....	3	262 90	—43 46	.....
1895, .....	3	305 46	+42 56	.....
1896, .....	3	288 52	—16 94	.....
1897, .....	3	305 92	+17 40	.....
1898, .....	3	307 31	+1 39	.....
1899, .....	3	329 70	+22 39	.....
1900, .....	3	340 32	+10 62	.....
1901, .....	3	343 03	+2 71	+16 50
WORSTED YARNS.				
1892, .....	3	297 58	.....	.....
1893, .....	3	299 20	+1 62	.....
1894, .....	3	279 20	—20 00	.....
1895, .....	3	277 22	—1 98	.....
1896, .....	3	236 21	—41 01	.....
1897, .....	3	276 54	+40 33	.....
1898, .....	3	245 88	—30 66	.....
1899, .....	3	285 88	+40 00	.....
1900, .....	3	295 95	+10 07	.....
1901, .....	3	281 07	—14 88	—16 51

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earnings.	Increase (+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease (—) 1901 as compared with 1892.
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## MISCELLANEOUS YARNS.

1892, .....	9	\$389 80	\$	\$
1893, .....	9	316 07	—73 73	.....
1894, .....	9	330 31	+14 24	.....
1895, .....	9	358 57	+28 26	.....
1896, .....	9	344 51	—14 06	.....
1897, .....	9	371 72	+27 21	.....
1898, .....	9	339 05	—32 67	.....
1899, .....	9	378 27	+39 22	.....
1900, .....	9	401 49	+23 22	.....
1901, .....	9	411 02	+9 53	+21 22

## WOOLEN GOODS.

1892, .....	16	350 51	.....	.....
1893, .....	16	310 19	—40 32	.....
1894, .....	16	286 00	—24 19	.....
1895, .....	16	313 49	+27 49	.....
1896, .....	16	304 88	—8 61	.....
1897, .....	16	330 75	+25 87	.....
1898, .....	16	334 65	+3 90	.....
1899, .....	16	344 42	+9 77	.....
1900, .....	16	362 87	+18 45	.....
1901, .....	16	354 35	—8 52	+3 84

## COTTON GOODS.

1892, .....	17	384 50	.....	.....
1893, .....	17	306 30	—78 28	.....

11—9—1901

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earnings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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## COTTON GOODS—Continued.

1894, .....	17	\$317 75	+\$11 45	\$
1895, .....	17	332 19	+14 44	.....
1896, .....	17	273 27	—58 92	.....
1897, .....	17	299 84	+26 57	.....
1898, .....	17	323 42	+23 58	.....
1899, .....	17	351 08	+27 66	.....
1900, .....	17	340 78	—10 30	.....
1901, .....	17	352 53	+11 75	—31 97

## COTTON AND WOOLEN GOODS.

1892, .....	12	346 10	.....	.....
1893, .....	12	310 00	—36 10	.....
1894, .....	12	290 19	—19 81	.....
1895, .....	12	306 62	+16 43	.....
1896, .....	12	286 72	—19 90	.....
1897, .....	12	309 46	+22 74	.....
1898, .....	12	315 53	+6 07	.....
1899, .....	12	323 06	+7 53	.....
1900, .....	12	324 05	+99	.....
1901, .....	12	310 79	—13 26	—35 31

## WORSTED GOODS.

1892, .....	3	362 87	.....	.....
1893, .....	3	351 18	—11 69	.....
1894, .....	3	344 35	—6 83	.....
1895, .....	3	352 16	+7 81	.....



## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earnings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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## WORSTED GOODS—Continued.

1896, .....	3	\$340 08	—\$12 08	\$
1897, .....	3	420 51	+80 43	.....
1898, .....	3	418 78	—1 73	.....
1899, .....	3	405 67	—13 11	.....
1900, .....	3	413 50	+7 83	.....
1901, .....	3	417 86	+4 36	+54 99

## KNIT GOODS.

1892, .....	5	289 84	.....	.....
1893, .....	5	262 53	—27 31	.....
1894, .....	5	254 93	—7 60	.....
1895, .....	5	274 82	+19 89	.....
1896, .....	5	234 38	—40 44	.....
1897, .....	5	245 16	+10 78	.....
1898, .....	5	252 23	+7 07	.....
1899, .....	5	287 28	+35 05	.....
1900, .....	5	249 69	—37 59	.....
1901, .....	5	230 87	—18 82	—58 97

## CHENILLE GOODS.

1892, .....	5	411 21	.....	.....
1893, .....	5	377 93	—33 28	.....
1894, .....	5	376 55	—1 38	.....
1895, .....	5	387 14	+10 59	.....
1896, .....	5	364 13	—23 01	.....
1897, .....	5	373 04	+8 91	.....

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average yearly earnings.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
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## CHENILLE GOODS—Continued.

1898, .....	5	\$356 20	—\$16 84	\$
1899, .....	5	421 29	+65 09	.....
1900, .....	5	402 55	—18 74	.....
1901, .....	5	419 50	+16 95	+8 29

## MIXED TEXTILES.

1892, .....	9	351 81	.....	.....
1893, .....	9	308 40	—43 41	.....
1894, .....	9	287 86	—20 54	.....
1895, .....	9	303 30	+15 44	.....
1896, .....	9	295 37	—7 93	.....
1897, .....	9	292 18	—3 19	.....
1898, .....	9	298 23	+6 05	.....
1899, .....	9	315 05	+16 82	.....
1900, .....	9	308 02	—7 03	.....
1901, .....	9	313 92	+5 90	—37 89

## TAPESTRY AND TABLE COVERS.

1892, .....	3	420 53	.....	.....
1893, .....	3	312 98	—107 55	.....
1894, .....	3	400 53	+87 55	.....
1895, .....	3	382 64	—17 89	.....
1896, .....	3	389 07	+6 43	.....
1897, .....	3	410 37	+21 30	.....
1898, .....	3	390 10	—20 27	.....

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average yearly earnings.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
TAPESTRY AND TABLE COVERS—Continued.				
1899, .....	3	\$384 80	—\$5 30	\$
1900, .....	3	417 92	+33 12	.....
1901, .....	3	426 34	+8 42	+5 81
HOSIERY.				
1892, .....	13	261 85	.....	.....
1893, .....	13	249 64	—12 21	.....
1894, .....	13	219 16	—30 48	.....
1895, .....	13	259 50	+40 34	.....
1896, .....	13	233 41	—26 09	.....
1897, .....	13	256 76	+23 35	.....
1898, .....	13	251 37	—5 39	.....
1899, .....	13	252 76	+1 39	.....
1900, .....	13	269 36	+16 60	.....
1901, .....	13	273 62	+4 26	+11 77
HOSIERY AND KNIT GOODS.				
1892, .....	3	331 61	.....	.....
1893, .....	3	306 32	—25 29	.....
1894, .....	3	319 67	+13 35	.....
1895, .....	3	285 81	—33 86	.....
1896, .....	3	232 27	—53 54	.....
1897, .....	3	276 78	+44 51	.....
1898, .....	3	284 76	+7 98	.....
1899, .....	3	312 85	+28 09	.....
1900, .....	3	292 02	—20 83	.....
1901, .....	3	309 32	+17 30	—22 29

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earnings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
SILK BROAD GOODS.				
1892, .....	4	\$247 96	\$	\$
1893, .....	4	227 45	—20 51	.....
1894, .....	4	250 43	+22 98	.....
1895, .....	4	234 54	—15 89	.....
1896, .....	4	254 56	+20 02	.....
1897, .....	4	237 23	—17 33	.....
1898, .....	4	244 27	+7 04	.....
1899, .....	4	252 49	+8 22	.....
1900, .....	4	239 41	—13 08	.....
1901, .....	4	231 76	—7 65	—16 20



## AVERAGE DAILY WAGE.

COMPARISON OF AVERAGE DAILY WAGE OF EMPLOYES, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

(In this table the average daily wage of employes, skilled and unskilled, in the same establishments for each of the years 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 and 1901 is presented, with the relative increase or decrease, together with the increase or decrease 1901 over 1892. Forty-four industries, representing 354 establishments, are considered.)

Character of Industry and Years.	Number of establishments considered.	Average daily wage.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
PIG IRON.				
			Cts.	Cts.
1892, .....	13	\$1 49	.....	.....
1893, .....	13	1 56	+07	.....
1894, .....	13	1 26	—30	.....
1895, .....	13	1 48	+22	.....
1896, .....	13	1 44	—04	.....
1897, .....	13	1 31	—13	.....
1898, .....	13	1 30	—01	.....
1899, .....	13	1 55	+25	.....
1900, .....	13	1 44	—11	.....
1901, .....	13	1 71	+27	+22
ROLLING MILLS—GENERAL				
1892, .....	32	1 79	.....	.....
1893, .....	32	1 78	—01	.....
1894, .....	32	1 61	—17	.....
1895, .....	32	1 62	+01	.....
1896, .....	32	1 66	+04	.....
1897, .....	32	1 55	—11	.....
1898, .....	32	1 55	.....	.....

AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE OF EMPLOYES, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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ROLLING MILLS—GENERAL PRODUCT—Continued.			Cts.	Cts.
1899, .....	32	\$1 87	+32	.....
1900, .....	32	1 96	+09	.....
1901, .....	32	2 19	+23	+40

IRON AND STEEL SHEETS AND PLATES.				
1892, .....	14	2 18	.....	.....
1893, .....	14	2 38	+20	.....
1894, .....	14	1 97	—41	.....
1895, .....	14	1 82	—15	.....
1896, .....	14	2 05	+23	.....
1897, .....	14	1 82	—23	.....
1898, .....	14	1 80	—02	.....
1899, .....	14	1 95	+15	.....
1900, .....	14	2 05	+10	.....
1901, .....	14	2 08	+03	—10

PLATE AND BAR.				
1892, .....	3	2 06	.....	.....
1893, .....	3	2 49	+43	.....
1894, .....	3	1 73	—76	.....
1895, .....	3	1 48	—25	.....
1896, .....	3	2 01	+53	.....
1897, .....	3	1 62	—39	.....
1898, .....	3	1 52	—10	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE OF EMPLOYES, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
PLATE AND BAR—Continued.			Cts.	Cts.
1899, .....	3	\$1 70	+18	.....
1900, .....	3	1 52	—18	.....
1901, .....	3	2 20	+68	+14
STEEL.				
1892, .....	13	1 80	.....	.....
1893, .....	13	1 83	+03	.....
1894, .....	13	1 69	—14	.....
1895, .....	13	1 73	+04	.....
1896, .....	13	2 08	+35	.....
1897, .....	13	1 75	—33	.....
1898, .....	13	1 70	—05	.....
1899, .....	13	1 81	+11	.....
1900, .....	13	2 13	+32	.....
1901, .....	13	1 88	—25	+08
ARCHITECTURAL CAST AND WROUGHT IRON WORK.				
1892, .....	4	1 95	.....	.....
1893, .....	4	1 89	—06	.....
1894, .....	4	1 63	—26	.....
1895, .....	4	1 78	+15	.....
1896, .....	4	1 81	+03	.....
1897, .....	4	1 81	.....	.....
1898, .....	4	1 76	—05	.....
1899, .....	4	1 81	+05	.....
1900, .....	4	1 79	—02	.....
1901, .....	4	1 77	—02	—18

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE OF EMPLOYES, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
IRON FORGING.			Cts.	Cts.
1892, .....	4	\$2 48	.....	.....
1893, .....	4	2 45	—03	.....
1894, .....	4	1 71	—74	.....
1895, .....	4	1 81	+10	.....
1896, .....	4	2 11	+30	.....
1897, .....	4	1 98	—13	.....
1898, .....	4	1 87	—11	.....
1899, .....	4	1 89	+02	.....
1900, .....	4	2 52	+63	.....
1901, .....	4	2 51	—01	+03
NAILS AND SPIKES.				
1892, .....	10	1 68	.....	.....
1893, .....	10	1 73	+05	.....
1894, .....	10	1 47	—26	.....
1895, .....	10	1 60	+13	.....
1896, .....	10	1 36	—24	.....
1897, .....	10	1 42	+06	.....
1898, .....	10	1 29	—13	.....
1899, .....	10	1 48	+19	.....
1900, .....	10	1 69	+21	.....
1901, .....	10	1 67	—02	—01
NUTS AND BOLTS.				
1892, .....	2	1 26	.....	.....
1893, .....	2	1 11	—15	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE OF EMPLOYES, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average daily wage.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
NUTS AND BOLTS—Continued.			Cts.	Cts.
1894, .....	2	\$1 30	+19	.....
1895, .....	2	1 38	+08	.....
1896, .....	2	1 34	—04	.....
1897, .....	2	1 14	—20	.....
1898, .....	2	1 26	+12	.....
1899, .....	2	1 80	+54	.....
1900, .....	2	1 47	—33	.....
1901, .....	2	1 42	—05	+16
PIPES AND TUBES.				
1892, .....	4	1 61	.....	.....
1893, .....	4	1 52	—09	.....
1894, .....	4	1 52	.....	.....
1895, .....	4	1 54	+02	.....
1896, .....	4	1 42	—12	.....
1897, .....	4	1 70	+28	.....
1898, .....	4	1 68	—02	.....
1899, .....	4	1 73	+05	.....
1900, .....	4	1 75	+02	.....
1901, .....	4	1 72	—03	+11
IRON FOUNDRIES AND MACHINE WORKS.				
1892, .....	25	1 84	.....	.....
1893, .....	25	1 77	—07	.....
1894, .....	25	1 79	+02	.....
1895, .....	25	1 71	—08	.....



## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE OF EMPLOYES, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average daily wage.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
IRON FOUNDRIES AND MACHINE WORKS—Continued.				
			Cts.	Cts.
1896, .....	25	\$1 71	.....	.....
1897, .....	25	1 69	—02	.....
1898, .....	25	1 76	+07	.....
1899, .....	25	1 76	.....	.....
1900, .....	25	1 85	+09	.....
1901, .....	25	1 87	+02	+03
STOVES, RANGES, HEATERS, ETC.				
1892, .....	9	1 78	.....	.....
1893, .....	9	1 82	+04	.....
1894, .....	9	2 02	+20	.....
1895, .....	9	1 96	—06	.....
1896, .....	9	1 94	—02	.....
1897, .....	9	1 90	—04	.....
1898, .....	9	1 85	—05	.....
1899, .....	9	1 97	+12	.....
1900, .....	9	2 25	+28	.....
1901, .....	9	2 14	—11	+36
HARDWARE.				
1892, .....	4	1 32	.....	.....
1893, .....	4	1 51	+19	.....
1894, .....	4	1 65	+14	.....
1895, .....	4	1 43	—22	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE OF EMPLOYES, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as compared with the preced- ing year.	Increase (+) or decrease (—) 1901 as compared with 1892.
HARDWARE—Continued.			Cts.	Cts.
1896, .....	4	\$1 33	—10	.....
1897, .....	4	1 35	+02	.....
1898, .....	4	1 46	+11	.....
1899, .....	4	1 46	.....	.....
1900, .....	4	1 35	—11	.....
1901, .....	4	1 36	+01	+04
MALLEABLE IRON.				
1892, .....	2	1 71	.....	.....
1893, .....	2	1 77	+06	.....
1894, .....	2	1 79	+02	.....
1895, .....	2	1 86	+07	... ..
1896, .....	2	1 72	—14	.....
1897, .....	2	1 77	+05	.....
1898, .....	2	1 68	—09	.....
1899, .....	2	1 79	+11	.....
1900, .....	2	1 99	+20	.....
1901, .....	2	1 83	—16	+12
SAWS, EDGE TOOLS, ETC.				
1892, .....	5	1 77	.....	.....
1893, .....	5	1 86	+09	.....
1894, .....	5	1 55	—31	.....
1895, .....	5	1 83	+28	.....
1896, .....	5	1 79	—04	.....
1897, .....	5	1 70	—09	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE OF EMPLOYES, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
SAWS, EDGE TOOLS, ETC.— Continued.				
			Cts.	Cts.
1898, .....	5	\$1 67	—03	.....
1899, .....	5	1 71	+04	.....
1900, .....	5	1 72	+01	.....
1901, .....	5	1 75	+03	—02
METAL AND METALLIC GOODS.				
1892, .....	8	1 50	.....	.....
1893, .....	8	1 61	+11	.....
1894, .....	8	1 57	—04	.....
1895, .....	8	1 56	—01	.....
1896, .....	8	1 63	+07	.....
1897, .....	8	1 63	.....	.....
1898, .....	8	1 53	—10	.....
1899, .....	8	1 53	.....	.....
1900, .....	8	1 69	+16	.....
1901, .....	8	1 56	—13	+06
LOCOMOTIVES AND ENGINES.				
1892, .....	14	1 96	.....	.....
1893, .....	14	1 97	+01	.....
1894, .....	14	1 79	—18	.....
1895, .....	14	1 91	+12	.....
1896, .....	14	1 78	—13	.....
1897, .....	14	1 82	+04	.....
1898, .....	14	1 92	+10	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE OF EMPLOYES, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase (+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease (—) 1901 as compared with 1892.
LOCOMOTIVES AND ENGINES—				
Continued .			Cts.	Cts.
1899, .....	14	\$1 94	+02	.....
1900, .....	14	1 98	+04	.....
1901, .....	14	2 06	+08	+10
ENGINES AND BOILERS.				
1892, .....	6	1 66	.....	.....
1893, .....	6	1 76	+10	.....
1894, .....	6	1 77	+01	.....
1895, .....	6	1 83	+06	.....
1896, .....	6	1 67	—16	.....
1897, .....	6	1 54	—13	.....
1898, .....	6	1 66	+12	.....
1899, .....	6	1 71	+05	.....
1900, .....	6	1 74	+03	.....
1901, .....	6	1 76	+02	+10
BOILERS.				
1892, .....	7	1 51	.....	.....
1893, .....	7	1 57	+06	.....
1894, .....	7	1 45	—12	.....
1895, .....	7	1 78	+33	.....
1896, .....	7	1 48	—30	.....
1897, .....	7	1 47	—01	.....
1898, .....	7	1 33	—14	.....
1899, .....	7	1 51	+18	.....
1900, .....	7	1 53	+02	.....
1901, .....	7	1 57	+04	+06

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE OF EMPLOYES, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average daily wage.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
BRIDGES.			Cts.	Cts.
1894, .....	1	\$1 41	—58	.....
1893, .....	4	1 40	—01	.....
1894, .....	4	1 33	—07	.....
1895, .....	4	1 53	+20	.....
1896, .....	4	1 39	—14	.....
1897, .....	4	1 43	+04	.....
1898, .....	4	1 45	+02	.....
1899, .....	4	1 48	+03	.....
1900, .....	4	1 91	+43	.....
1901, .....	4	1 79	—12	+38
CAR SPRINGS.				
1892, .....	1	2 17	.....	.....
1893, .....	1	1 79	—38	.....
1894, .....	1	1 80	+01	.....
1895, .....	1	2 28	+48	.....
1896, .....	1	2 59	+31	.....
1897, .....	1	2 27	—32	.....
1898, .....	1	2 38	+11	.....
1899, .....	1	2 43	+05	.....
1900, .....	1	2 57	+14	.....
1901, .....	1	2 72	+15	+55
CAR COUPLERS.				
1892, .....	1	1 76	.....	.....
1893, .....	1	1 99	+23	.....



## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE OF EMPLOYES, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
CAR COUPLERS—Continued.			Cts.	Cts.
1892, .....	4	\$1 41	.....	.....
1895, .....	1	1 77	+36	.....
1896, .....	1	1 47	—30	.....
1897, .....	1	1 51	+04	.....
1898, .....	1	1 48	—03	.....
1899, .....	1	1 64	+16	.....
1900, .....	1	1 66	+02	.....
1901, .....	1	1 60	—06	—16
CARS AND CAR WHEELS.				
1892, .....	8	1 77	.....	.....
1893, .....	8	1 78	+01	.....
1894, .....	8	1 75	—03	.....
1895, .....	8	1 75	.....	.....
1896, .....	8	1 69	—06	.....
1897, .....	8	1 74	+05	.....
1898, .....	8	1 80	+06	.....
1899, .....	8	1 82	+02	.....
1900, .....	8	1 84	+02	.....
1901, .....	8	1 85	+01	+08
WINDOW GLASS, BOTTLE AND TABLE GOODS.				
1892, .....	17	1 83	.....	.....
1893, .....	17	1 89	+06	.....
1894, .....	17	1 65	—24	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE OF EMPLOYES, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
WINDOW GLASS, BOTTLE AND TABLE GOODS—Continued.				
			Cts.	Cts.
1895, .....	17	\$1 47	—18	.....
1896, .....	17	1 71	+24	.....
1897, .....	17	1 69	—02	.....
1898, .....	17	1 67	—02	.....
1899, .....	17	1 73	+06	.....
1900, .....	17	1 77	+04	.....
1901, .....	17	1 96	+19	+13
SHIP BUILDING.				
1892, .....	1	1 78	.....	.....
1893, .....	1	1 80	+02	.....
1894, .....	1	1 86	+06	.....
1895, .....	1	1 85	—01	.....
1896, .....	1	1 80	—05	.....
1897, .....	1	1 79	—01	.....
1898, .....	1	1 60	—19	.....
1899, .....	1	1 75	+15	.....
1900, .....	1	1 65	—10	.....
1901, .....	1	1 60	—05	—18
PIANOS AND ORGANS.				
1892, .....	2	1 10	.....	.....
1893, .....	2	1 11	+01	.....
1894, .....	2	1 10	—01	.....
1895, .....	2	1 20	+10	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE OF EMPLOYES, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
PIANOS AND ORGANS—Con- tinued.				
			Cts.	Cts.
1896, .....	2	1 37	+17	.....
1897, .....	2	1 41	+04	.....
1898, .....	2	1 44	+03	.....
1899, .....	2	1 48	+04	.....
1900, .....	2	1 39	—09	.....
1901, .....	2	1 46	+07	+36
RUBBER BOOTS AND SHOES.				
1892, .....	1	1 75	.....	.....
1893, .....	1	1 80	+05	.....
1894, .....	1	1 48	—32	.....
1895, .....	1	1 40	—08	.....
1896, .....	1	1 39	—01	.....
1897, .....	1	1 24	—15	.....
1898, .....	1	1 43	+19	.....
1899, .....	1	1 45	+02	.....
1900, .....	1	1 49	+04	.....
1901, .....	1	1 33	—16	—42
CARBONS.				
1892, .....	1	1 73	.....	.....
1893, .....	1	1 80	+07	.....
1894, .....	1	1 76	—04	.....
1895, .....	1	1 90	+14	.....
1896, .....	1	1 55	—35	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE OF EMPLOYES, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average daily wage.	Increase(+) or decrease(—) as compared with the preceding year.	Increase(+) or decrease(—) 1901 as compared with 1892.
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## CARBONS—Continued.

			Cts.	Cts.
1897, .....	1	\$1 55	.....	.....
1898, .....	1	1 55	.....	.....
1899, .....	1	1 84	+29	.....
1900, .....	1	1 77	—07	.....
1901, .....	1	1 74	—03	+01

## CARPETS.

1892, .....	24	1 36	.....	.....
1893, .....	24	1 69	+33	.....
1894, .....	24	1 37	—32	.....
1895, .....	24	1 35	—02	.....
1896, .....	24	1 30	—05	.....
1897, .....	24	1 24	—06	.....
1898, .....	24	1 25	+01	.....
1899, .....	24	1 25	.....	.....
1900, .....	24	1 30	+05	.....
1901, .....	24	1 34	+04	—02

## WOOLEN YARNS.

1892, .....	10	95	.....	.....
1893, .....	10	1 19	+24	.....
1894, .....	10	90	—29	.....
1895, .....	10	89	—01	.....
1896, .....	10	1 14	+25	.....
1897, .....	10	88	—26	.....
1898, .....	10	1 11	+23	.....
1899, .....	10	1 12	+01	.....
1900, .....	10	1 03	—09	.....
1901, .....	10	1 05	+02	+10

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE OF EMPLOYES, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
COTTON YARNS.				
			Cts.	Cts.
1892, .....	3	\$1 10	.....	.....
1893, .....	3	1 23	+13	.....
1894, .....	3	1 01	—22	.....
1895, .....	3	1 06	+05	.....
1896, .....	3	1 04	—02	.....
1897, .....	3	1 03	—01	.....
1898, .....	3	1 04	+01	.....
1899, .....	3	1 08	+04	.....
1900, .....	3	1 11	+03	.....
1901, .....	3	1 19	+08	+09
WORSTED YARNS.				
1892, .....	3	99	.....	.....
1893, .....	3	1 50	+51	.....
1894, .....	3	1 01	—49	.....
1895, .....	3	92	—09	.....
1896, .....	3	96	+04	.....
1897, .....	3	96	.....	.....
1898, .....	3	96	.....	.....
1899, .....	3	98	+02	.....
1900, .....	3	1 00	+02	.....
1901, .....	3	95	—05	—04



## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE OF EMPLOYES, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
MISCELLANEOUS YARNS.			Cts.	Cts.
1892, .....	9	\$1 29	.....	.....
1893, .....	9	1 25	—04	.....
1894, .....	9	1 26	+01	.....
1895, .....	9	1 26	.....	.....
1896, .....	9	1 61	+35	.....
1897, .....	9	1 31	—30	.....
1898, .....	9	1 29	—02	.....
1899, .....	9	1 37	+08	.....
1900, .....	9	1 50	+13	.....
1901, .....	9	1 42	—08	+13
WOOLEN GOODS.				
1892, .....	16	1 17	.....	.....
1893, .....	16	1 27	+10	.....
1894, .....	16	1 03	—24	.....
1895, .....	16	1 05	+02	.....
1896, .....	16	1 11	+06	.....
1897, .....	16	1 14	+03	.....
1898, .....	16	1 16	+02	.....
1899, .....	16	1 20	+04	.....
1900, .....	16	1 25	+05	.....
1901, .....	16	1 27	+02	+10
COTTON GOODS.				
1892, .....	17	1 27	.....	.....
1893, .....	17	1 23	—04	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE OF EMPLOYES, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average daily wage.	Increase (+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
COTTON GOODS—Continued.			Cts.	Cts.
1894, .....	17	\$1 29	+06	.....
1895, .....	17	1 16	—13	.....
1896, .....	17	1 06	—10	.....
1897, .....	17	1 02	—04	.....
1898, .....	17	1 09	+07	.....
1899, .....	17	1 17	+08	.....
1900, .....	17	1 18	+01	.....
1901, .....	17	1 25	+07	—02
COTTON AND WOOLEN GOODS.				
1892, .....	12	1 15	.....	.....
1893, .....	12	1 22	+07	.....
1894, .....	12	1 12	—10	.....
1895, .....	12	1 16	+04	.....
1896, .....	12	1 30	+14	.....
1897, .....	12	1 15	—15	.....
1898, .....	12	1 16	+01	.....
1899, .....	12	1 18	+02	.....
1900, .....	12	1 26	+08	.....
1901, .....	12	1 18	—08	+03
WORSTED GOODS.				
1892, .....	3	1 17	.....	.....
1893, .....	3	1 58	+41	.....
1894, .....	3	1 45	—13	.....
1895, .....	3	1 33	—12	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE OF EMPLOYES, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase (+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease (—) 1901 as compared with 1892.
WORSTED GOODS—Continued.			Cts.	Cts.
1896, .....	3	\$1 55	+22	.....
1897, .....	3	1 46	—09	.....
1898, .....	3	1 53	+07	.....
1899, .....	3	1 38	—15	.....
1900, .....	3	1 60	+22	.....
1901, .....	3	1 65	+05	+48
KNIT GOODS.				
1892, .....	5	93	.....	.....
1893, .....	5	94	+01	.....
1894, .....	5	1 00	+06	.....
1895, .....	5	97	—03	.....
1896, .....	5	90	—07	.....
1897, .....	5	91	+01	.....
1898, .....	5	1 00	+09	.....
1899, .....	5	1 02	+02	.....
1900, .....	5	88	—14	.....
1901, .....	5	90	+02	—03
CHENILLE GOODS.				
1892, .....	5	1 28	.....	.....
1893, .....	5	1 28	.....	.....
1894, .....	5	1 26	—02	.....
1895, .....	5	1 29	+03	.....
1896, .....	5	1 25	—04	.....
1897, .....	5	1 24	—01	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE OF EMPLOYES, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
CHENILLE GOODS—Continued.			Cts.	Cts.
1898, .....	5	\$1 18	—06	.....
1899, .....	5	1 44	+26	.....
1900, .....	5	1 52	+08	.....
1901, .....	5	1 49	—03	+21
MIXED TEXTILES.				
1892, .....	9	1 16	.....	.....
1893, .....	9	1 06	—10	.....
1894, .....	9	1 00	—06	.....
1895, .....	9	1 02	+02	.....
1896, .....	9	1 05	+03	.....
1897, .....	9	1 04	—01	.....
1898, .....	9	99	—05	.....
1899, .....	9	1 05	+06	.....
1900, .....	9	1 03	—02	.....
1901, .....	9	1 08	+05	--08
TAPESTRY AND TABLE COV- ERS.				
1892, .....	3	1 39	.....	.....
1893, .....	3	1 08	—31	.....
1894, .....	3	1 33	+25	.....
1895, .....	3	1 30	—03	.....
1896, .....	3	1 34	+04	.....
1897, .....	3	1 41	+07	.....
1898, .....	3	1 34	—07	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE OF EMPLOYEES, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
TAPESTRY AND TABLE COVERS—Continued.				
			Cts.	Cts.
1899, .....	3	\$1 39	+05	.....
1900, .....	3	1 66	+27	.....
1901, .....	3	1 54	—12	+15
HOSIERY.				
1892, .....	13	88	.....	.....
1893, .....	13	96	+08	.....
1894, .....	13	80	—16	.....
1895, .....	13	88	+08	.....
1896, .....	13	81	—07	.....
1897, .....	13	89	+08	.....
1898, .....	13	90	+01	.....
1899, .....	13	90	.....	.....
1900, .....	13	98	+08	.....
1901, .....	13	94	—04	+06
HOSIERY AND KNIT GOODS.				
1892, .....	3	1 11	.....	.....
1893, .....	3	1 05	—06	.....
1894, .....	3	1 07	+02	.....
1895, .....	3	1 05	—02	.....
1896, .....	3	80	—25	.....
1897, .....	3	92	+12	.....
1898, .....	3	95	+03	.....
1899, .....	3	1 04	+09	.....
1900, .....	3	98	—06	.....
1901, .....	3	1 04	+06	—07



AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE OF EMPLOYES, SKILLED AND UNSKILLED, IN SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
SILK BROAD GOODS.			Cts.	Cts.
1892, .....	4	\$0 81	.....	.....
1893, .....	4	92	+11	.....
1894, .....	4	86	—06	.....
1895, .....	4	77	—09	.....
1896, . .....	4	93	+16	.....
1897, .....	4	78	—15	.....
1898, .....	4	84	+06	.....
1899, .....	4	84	.....	.....
1900, .....	4	84	.....	.....
1901, ... ..	4	86	+02	+05

## VALUE OF PRODUCT.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

(In this table the value of product by the same establishments for each of the years 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 and 1901 is presented, with the relative increase or decrease, together with the increase or decrease 1901 over 1892. Forty-four industries, representing 354 establishments, are considered.)

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of product.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
PIG IRON.				
1892, .....	13	\$10,597,537	\$	\$
1893, .....	13	8,026,593	—2,570,944	.....
1894, .....	13	5,580,847	—2,445,746	.....
1895, .....	13	8,220,266	+2,639,419	.....
1896, .....	13	7,207,417	—1,012,849	.....
1897, .....	13	6,043,503	—1,163,914	.....
1898, .....	13	8,307,428	+2,263,925	.....
1899, .....	13	14,277,497	+5,970,069	.....
1900, .....	13	16,492,134	+2,214,637	.....
1901, .....	13	13,645,721	—2,846,413	+3,048,184
ROLLING MILLS—GENERAL PRODUCT.				
1892, .....	32	91,945,908	.....	.....
1893, .....	32	86,050,594	—5,895,314	.....
1894, .....	32	72,055,767	—13,994,827	.....
1895, .....	32	84,689,471	+12,633,704	.....
1896, .....	32	88,725,133	+4,035,662	.....
1897, .....	32	93,540,222	+4,815,089	.....

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of product.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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ROLLING MILLS—GENERAL  
PRODUCT—Continued.

1898, .....	32	\$111,954,871	+\$18,414,649	\$
1899, .....	32	169,222,486	+57,267,615	.....
1900, .....	32	198,252,323	+29,029,837	.....
1901, .....	32	196,936,504	—1,315,819	+104,990,596

IRON AND STEEL SHEETS AND  
PLATES.

1892, .....	14	11,680,127	.....	.....
1893, .....	14	9,584,689	—2,095,438	.....
1894, .....	14	7,798,069	—1,786,620	.....
1895, .....	14	10,604,551	+2,806,482	.....
1896, .....	14	8,740,308	—1,864,243	.....
1897, .....	14	9,668,034	+927,726	.....
1898, .....	14	13,760,272	+4,092,238	.....
1899, .....	14	22,050,830	+8,290,558	.....
1900, .....	14	22,834,195	+783,365	.....
1901, .....	14	28,209,826	+5,375,631	+16,529,699

PLATE AND BAR.

1892, .....	3	4,991,702	.....	.....
1893, .....	3	3,648,252	—1,343,450	.....
1894, .....	3	2,505,387	—1,142,865	.....
1895, .....	3	3,059,825	+554,438	.....
1896, .....	3	2,822,922	—236,903	.....
1897, .....	3	3,162,028	+339,106	.....

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of product.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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## PLATE AND BAR—Continued.

1898, .....	3	\$3,018,260	—\$143,768	\$
1899, .....	3	5,472,624	+2,454,364	.....
1900, .....	3	4,028,343	—1,444,281	.....
1901, .....	3	4,246,894	+218,551	—744,808

## STEEL.

1892, .....	13	24,711,579	.....	.....
1893, .....	13	18,805,567	—5,906,012	.....
1894, .....	13	15,781,892	—3,023,675	.....
1895, .....	13	20,687,948	+4,906,056	.....
1896, .....	13	16,603,033	—4,084,915	.....
1897, .....	13	17,454,677	+851,644	.....
1898, .....	13	20,327,249	+2,872,572	.....
1899, .....	13	29,873,149	+9,545,900	.....
1900, .....	13	24,779,969	—5,093,180	.....
1901, .....	13	37,692,910	+12,912,941	+12,981,331

ARCHITECTURAL CAST AND  
WROUGHT IRON WORK.

1892, .....	4	3,040,397	.....	.....
1893, .....	4	2,024,821	—1,015,576	.....
1894, .....	4	1,407,416	—617,405	.....
1895, .....	4	1,939,661	+532,245	.....
1896, .....	4	2,236,372	+296,711	.....
1897, .....	4	1,847,959	—388,413	.....
1898, .....	4	2,775,266	+927,307	.....

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of product.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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ARCHITECTURAL CAST AND  
WROUGHT IRON WORK—  
Continued.

1899, .....	4	\$3,143,891	+\$368,625	\$
1900, .....	4	5,859,998	+2,716,107	.....
1901, .....	4	7,210,281	+1,350,283	+4,169,884

## IRON FORGING.

1892, .....	4	1,053,091	.....	.....
1893, .....	4	789,496	—263,595	.....
1894, .....	4	604,106	—185,390	.....
1895, .....	4	779,569	+175,463	.....
1896, .....	4	739,985	—39,584	.....
1897, .....	4	691,901	—48,084	.....
1898, .....	4	1,033,335	+341,434	.....
1899, .....	4	1,806,887	+773,552	.....
1900, .....	4	1,180,911	—625,976	.....
1901, .....	4	1,127,833	—53,078	+74,742

## NAILS AND SPIKES.

1892, .....	10	4,827,506	.....	.....
1893, .....	10	3,942,713	—884,793	.....
1894, .....	10	3,275,789	—666,924	.....
1895, .....	10	3,630,012	+354,223	.....
1896, .....	10	2,124,658	—1,505,354	.....
1897, .....	10	2,897,297	+772,639	.....
1898, .....	10	2,494,289	—403,008	.....



## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of product.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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## NAILS AND SPIKES—Continued.

1899, .....	10	\$3,663,000	+\$1,168,711	\$
1900, .....	10	5,207,812	+1,544,812	.....
1901, .....	10	3,036,702	—2,171,110	—1,790,804

## NUTS AND BOLTS.

1892, .....	2	1,152,138	.....	.....
1893, .....	2	1,007,993	—144,145	.....
1894, .....	2	844,782	—163,211	.....
1895, .....	2	1,107,466	+262,684	.....
1896, .....	2	845,826	—261,640	.....
1897, .....	2	858,788	+12,962	.....
1898, .....	2	1,042,896	+184,108	.....
1899, .....	2	1,686,712	+643,816	.....
1900, .....	2	2,231,393	+544,681	.....
1901, .....	2	2,184,110	—47,283	+1,031,972

## PIPES AND TUBES.

1892, .....	4	2,241,867	.....	.....
1893, .....	4	2,107,604	—134,263	.....
1894, .....	4	1,927,748	—179,856	.....
1895, .....	4	2,527,348	+599,600	.....
1896, .....	4	2,937,296	+409,948	.....
1897, .....	4	2,701,883	—235,413	.....
1898, .....	4	3,463,901	+762,018	.....
1899, .....	4	4,625,429	+1,161,528	.....
1900, .....	4	5,857,222	+1,231,793	.....
1901, .....	4	6,052,557	+195,335	+3,810,690

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of product.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
IRON FOUNDRIES AND MA- CHINE WORKS.				
1892, .....	25	\$6,311,627	\$	\$
1893, .....	25	4,628,768	—1,682,859	.....
1894, .....	25	3,699,595	—929,173	.....
1895, .....	25	4,342,835	+643,240	.....
1896, .....	25	3,515,683	—827,152	.....
1897, .....	25	4,055,129	+539,446	.....
1898, .....	25	4,927,626	+872,497	.....
1899, .....	25	6,795,327	+1,867,701	.....
1900, .....	25	7,270,742	+475,415	.....
1901, .....	25	7,423,400	+152,658	+1,111,773
STOVES, RANGES, HEATERS, ETC.				
1892, .....	9	1,639,839	.....	.....
1893, .....	9	1,525,391	—114,448	.....
1894, .....	9	1,218,872	—306,519	.....
1895, .....	9	1,431,181	+212,309	.....
1896, .....	9	1,383,157	—48,024	.....
1897, .....	9	1,414,639	+31,482	.....
1898, .....	9	1,461,366	+46,727	.....
1899, .....	9	1,798,904	+337,538	.....
1900, .....	9	1,815,164	+16,260	.....
1901, .....	9	1,756,821	—58,343	+116,982

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of product.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
HARDWARE.				
1892, .....	4	\$1,242,721	\$	\$
1893, .....	4	1,145,987	—96,734	.....
1894, .....	4	1,040,023	—105,964	.....
1895, .....	4	1,255,661	+215,638	.....
1896, .....	4	1,129,798	—125,863	.....
1897, .....	4	1,078,827	—50,971	.....
1898, .....	4	1,407,967	+329,140	.....
1899, .....	4	2,019,722	+611,755	.....
1900, .....	4	1,685,976	—333,746	.....
1901, .....	4	1,928,480	+242,504	+685,759
MALLEABLE IRON.				
1892, .....	2	452,363	.....	.....
1893, .....	2	362,608	—89,755	.....
1894, .....	2	296,371	—66,237	.....
1895, .....	2	367,157	+70,786	.....
1896, .....	2	414,786	+47,629	.....
1897, .....	2	404,410	—10,376	.....
1898, .....	2	704,698	+300,288	.....
1899, .....	2	887,905	+183,207	.....
1900, .....	2	747,232	—140,673	.....
1901, .....	2	860,568	+113,336	+408,295
SAWS, EDGE TOOLS, ETC.				
1892, .....	5	3,479,164	.....	.....
1893, .....	5	3,203,476	—275,688	.....

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of product.	Increase(+) or decrease(—) as compared with the preceding year.	Increase (+) or decrease(—) 1901 as compared with 1892.
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## SAWS, EDGE TOOLS, ETC.—Continued.

1894, .....	5	\$2,402,820	—\$800,656	\$
1895, .....	5	2,914,503	+511,683	... ..
1896, .....	5	2,731,311	—183,192	.....
1897, ..	5	2,527,680	—203,631	.... ..
1898, .....	5	3,238,334	+710,654	.....
1899, .....	5	4,559,222	+1,320,888	.....
1900, ..	5	4,764,529	+205,307	.....
1901, .....	5	5,095,464	+330,935	+1,616,300

## METAL AND METALLIC GOODS.

1892, .....	8	3,027,395	.....	.....
1893, .....	8	2,526,382	—501,013	.....
1894, .....	8	2,060,465	—465,917	.....
1895, .....	8	2,831,319	+770,854	.....
1896, .....	8	2,401,636	—429,683	.....
1897, .....	8	2,341,075	—60,561	.....
1898, .....	8	3,070,810	+729,735	.....
1899, .....	8	4,101,137	+1,030,327	.....
1900, .....	8	2,742,603	—1,358,534	.....
1901, .....	8	2,785,309	+42,706	—242,086

## LOCOMOTIVES AND ENGINES.

1892, .....	14	17,176,167	.....	.....
1893, .....	14	16,941,708	—234,459	.....
1894, .....	14	9,629,617	—7,312,091	.....

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of product.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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LOCOMOTIVES AND ENGINES—  
Continued.

1895, .....	14	\$12,709,222	+\$3,079,605	\$
1896, .....	14	14,348,550	+1,639,328	.....
1897, .....	14	14,327,515	—21,035	.....
1898, .....	14	19,449,658	+5,122,143	.....
1899, .....	14	25,412,790	+5,963,132	.....
1900, .....	14	33,554,210	+8,141,420	.....
1901, .....	14	37,028,910	+3,474,700	+19,852,743

## ENGINES AND BOILERS.

1892, .....	6	2,854,422	.....	.....
1893, .....	6	2,296,655	—557,767	.....
1894, .....	6	1,625,120	—671,535	.....
1895, .....	6	1,923,041	+297,921	.....
1896, .....	6	2,070,170	+147,129	.....
1897, .....	6	1,778,989	—291,181	.....
1898, .....	6	2,126,376	+347,387	.....
1899, .....	6	2,792,857	+666,481	.....
1900, .....	6	3,457,461	+664,604	.....
1901, .....	6	3,392,325	—65,136	+537,903

## BOILERS.

1892, .....	7	1,768,039	.....	.....
1893, .....	7	1,514,899	—253,140	.....
1894, .....	7	1,046,140	—468,759	.....
1895, .....	7	991,505	—54,635	.....



## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of product.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
<b>BOILERS—Continued.</b>				
1896, .....	7	\$1,040,575	+\$49,070	\$
1897, .....	7	887,529	—153,046	.....
1898, .....	7	1,444,757	+557,228	.....
1899, .....	7	1,273,424	—171,333	.....
1900, .....	7	1,531,763	+258,339	.....
1901, .....	7	1,885,929	+354,166	+117,890
<b>BRIDGES.</b>				
1892, .....	4	2,179,715	.....	.....
1893, .....	4	2,009,234	—170,481	.....
1894, .....	4	1,292,171	—717,063	.....
1895, .....	4	1,793,317	+501,146	.....
1896, .....	4	1,332,526	—460,791	.....
1897, .....	4	1,181,470	—151,056	.....
1898, .....	4	1,651,568	+470,098	.....
1899, .....	4	2,748,096	+1,096,528	.....
1900, .....	4	5,956,502	+3,208,406	.....
1901, .....	4	3,575,000	—2,381,502	+1,395,285
<b>CAR SPRINGS.</b>				
1892, .....	1	1,139,220	.....	.....
1893, .....	1	704,754	—434,466	.....
1894, .....	1	331,010	—373,744	.....
1895, .....	1	496,984	+165,974	.....
1896, .....	1	517,221	+20,237	.....
1897, .....	1	428,271	—88,950	.....

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of product.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
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## CAR SPRINGS—Continued.

1898, .....	1	\$652,635	+\$224,364	\$
1899, .....	1	1,045,408	+392,773	.....
1900, .....	1	1,123,226	+77,818	.....
1901, .....	1	1,070,693	—52,533	—68,527

## CAR COUPLERS.

1892, .....	1	1,455,135	.....	.....
1893, .....	1	1,009,284	—445,851	.....
1894, .....	1	510,732	—498,552	.....
1895, .....	1	985,258	+474,526	.....
1896, .....	1	1,349,321	+364,063	.....
1897, .....	1	1,052,857	—296,464	.....
1898, .....	1	1,404,617	+351,760	.....
1899, .....	1	1,668,325	+263,708	.....
1900, .....	1	1,524,435	—143,890	.....
1901, .....	1	1,052,300	—472,135	—402,835

## CARS AND CAR WHEELS.

1892, .....	8	7,920,412	.....	.....
1893, .....	8	6,054,890	—1,865,522	.....
1894, .....	8	4,090,667	—1,964,223	.....
1895, .....	8	4,291,747	+201,080	.....
1896, .....	8	4,208,607	—83,140	.....
1897, .....	8	3,265,217	—943,390	.....
1898, .....	8	4,200,831	+935,614	.....
1899, .....	8	5,329,637	+1,128,806	.....

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of product.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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CARS AND CAR WHEELS—Con-  
tinued.

1900, .....	8	\$6,276,282	+\$946,645	\$
1901, .....	8	5,739,513	—536,769	—2,180,899

WINDOW GLASS, BOTTLE AND  
TABLE GOODS.

1892, .....	17	5,919,793	.....	.....
1893, .....	17	4,523,986	—1,395,807	.....
1894, .....	17	4,620,213	+96,227	.....
1895, .....	17	4,306,614	—313,599	.....
1896, .....	17	3,969,520	—337,094	.....
1897, .....	17	4,941,382	+71,862	.....
1898, .....	17	5,690,250	+748,868	.....
1899, .....	17	6,425,487	+735,237	.....
1900, .....	17	5,583,805	—841,682	.....
1901, .....	17	5,204,192	—379,613	—715,601

## SHIP BUILDING.

1892, .....	1	501,753	.....	.....
1893, .....	1	832,720	+330,967	.....
1894, .....	1	506,192	—326,528	.....
1895, .....	1	426,303	—79,889	.....
1896, .....	1	686,720	+260,417	.....
1897, .....	1	476,868	—209,852	.....
1898, .....	1	1,217,489	+740,621	.....
1899, .....	1	1,507,546	+290,057	.....
1900, .....	1	1,493,910	—13,636	.....
1901, .....	1	1,170,750	—323,160	+668,997

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of product.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
PIANOS AND ORGANS.				
1892, .....	2	\$196,553	\$	\$
1893, .....	2	170,969	—25,584	.....
1894, .....	2	139,818	—31,151	.....
1895, .....	2	161,111	+21,293	.....
1896, .....	2	139,808	—21,303	.....
1897, .....	2	145,743	+5,935	.....
1898, .....	2	151,011	+5,268	.....
1899, .....	2	171,279	+20,268	.....
1900, .....	2	215,387	+44,108	.....
1901, .....	2	211,177	—4,210	+14,624
RUBBER BOOTS AND SHOES.				
1892, .....	1	749,235	.....	.....
1893, .....	1	845,688	+96,453	.....
1894, .....	1	711,056	—134,632	.....
1895, .....	1	839,553	+128,497	.....
1896, .....	1	812,523	—27,030	.....
1897, .....	1	619,765	—192,758	.....
1898, .....	1	960,923	+341,158	.....
1899, .....	1	1,082,260	+121,337	.....
1900, .....	1	1,059,420	—22,840	.....
1901, .....	1	941,993	—117,427	+192,758
CARBONS.				
1892, .....	1	59,000	.....	.....
1893, .....	1	70,000	+11,000	.....

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of product.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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## CARBONS—Continued.

1894, .....	1	\$85,000	+\$15,000	\$
1895, .....	1	76,500	—8,500	.....
1896, .....	1	83,000	+6,500	.....
1897, .....	1	75,000	—8,000	.....
1898, .....	1	70,000	—5,000	.....
1899, .....	1	66,000	—4,000	.....
1900, .....	1	60,167	—5,833	.....
1901, .....	1	60,846	+679	+1,846

## CARPETS.

1892, .....	24	11,614,157	.....	.....
1893, .....	24	8,626,792	—2,987,365	.....
1894, .....	24	8,222,838	—403,954	.....
1895, .....	24	9,325,013	+1,102,175	.....
1896, .....	24	7,626,053	—1,698,960	.....
1897, .....	24	8,670,951	+1,044,898	.....
1898, .....	24	8,147,236	—523,715	.....
1899, .....	24	9,987,646	+1,840,410	.....
1900, .....	24	9,652,462	—335,184	.....
1901, .....	24	9,718,668	+66,206	—1,895,489

## WOOLEN YARNS.

1892, .....	10	3,243,694	.....	.....
1893, .....	10	2,441,663	—802,031	.....
1894, .....	10	1,999,184	—442,479	.....
1895, .....	10	2,600,417	+601,233	.....



## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of product.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
1896, .....	10	\$2,338,390	—\$262,027	\$
1897, .....	10	2,700,099	+361,709	.....
1898, .....	10	3,091,557	+391,458	.....
1899, .....	10	4,042,767	+951,210	.....
1900, .....	10	5,181,604	+1,138,837	.....
1901, .....	10	4,781,637	—399,967	+1,537,943
COTTON YARNS.				
1892, .....	3	564,857	.....	.....
1893, .....	3	464,105	—100,752	.....
1894, .....	3	438,901	—25,204	.....
1895, .....	3	500,504	+61,603	.....
1896, .....	3	405,093	—95,411	.....
1897, .....	3	483,900	+78,807	.....
1898, .....	3	447,456	—36,444	.....
1899, .....	3	460,269	+12,813	.....
1900, .....	3	571,569	+111,300	.....
1901, .....	3	479,046	—92,523	—85,811
WORSTED YARNS.				
1892, .....	3	1,692,713	.....	.....
1893, .....	3	1,029,283	—663,430	.....
1894, .....	3	1,031,841	+2,558	.....
1895, .....	3	1,299,326	+267,485	.....
1896, .....	3	796,376	—502,950	.....
1897, .....	3	1,061,344	+264,968	.....

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of product.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
WORSTED YARNS—Continued.				
1898, .....	3	\$853,230	—\$208,114	\$
1899, .....	3	1,495,701	+642,471	.....
1900, .....	3	1,508,244	+12,543	.....
1901, .....	3	1,419,743	—88,501	—272,970
MISCELLANEOUS YARNS.				
1892, .....	9	1,291,013	.....	.....
1893, .....	9	889,403	—401,610	.....
1894, .....	9	764,435	—124,968	.....
1895, .....	9	898,503	+134,068	.....
1896, .....	9	701,547	—196,956	.....
1897, .....	9	1,025,606	+324,059	.....
1898, .....	9	802,170	—223,436	.....
1899, .....	9	1,105,504	+303,334	.....
1900, .....	9	1,012,111	—93,393	.....
1901, .....	9	1,025,967	+13,856	—265,046
WOOLEN GOODS.				
1892, .....	16	9,548,699	.....	.....
1893, .....	16	7,014,527	—2,534,172	.....
1894, .....	16	5,946,052	—1,068,475	.....
1895, .....	16	6,742,988	+796,636	.....
1896, .....	16	5,231,275	—1,511,713	.....
1897, .....	16	6,150,087	+918,812	.....
1898, .....	16	6,266,213	+116,126	.....
1899, .....	16	7,347,006	+1,080,793	.....

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of product.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
WOOLEN GOODS—Continued.				
1900, .....	16	\$7,198,316	—\$148,690	\$
1901, .....	16	7,845,888	+647,572	—1,702,811
COTTON GOODS.				
1892, .....	17	9,394,632	.....	.....
1893, .....	17	7,062,762	—2,331,870	.....
1894, .....	17	7,171,910	+109,148	.....
1895, .....	17	6,697,893	—474,017	.....
1896, .....	17	6,157,585	—540,308	.....
1897, .....	17	7,290,259	+1,132,674	.....
1898, .....	17	7,459,927	+169,668	.....
1899, .....	17	8,624,421	+1,164,494	.....
1900, .....	17	7,378,078	—1,246,343	.....
1901, .....	17	8,250,689	+872,611	—1,143,943
COTTON AND WOOLEN GOODS.				
1892, .....	12	2,207,731	.....	.....
1893, .....	12	1,676,241	—531,490	.....
1894, .....	12	1,408,290	—267,951	.....
1895, .....	12	1,508,407	+100,117	.....
1896, .....	12	1,296,700	—211,707	.....
1897, .....	12	1,485,822	+189,122	.....
1898, .....	12	1,584,830	+99,008	.....
1899, .....	12	1,904,700	+319,870	.....
1900, .....	12	1,751,815	—152,885	.....
1901, .....	12	1,640,565	—111,250	—567,166

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of product.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
WORSTED GOODS.				
1892, .....	3	\$1,393,225	\$	\$
1893, .....	3	754,032	—639,193	.....
1894, .....	3	942,455	+188,423	.....
1895, .....	3	1,026,041	+83,586	.....
1896, .....	3	637,328	—388,713	.....
1897, .....	3	1,311,883	+674,555	.....
1898, .....	3	1,311,890	+7	.....
1899, .....	3	1,382,803	+70,913	.....
1900, .....	3	1,098,506	—184,297	.....
1901, .....	3	929,687	—168,819	—463,538
KNIT GOODS.				
1892, .....	5	1,284,013	.....	.....
1893, .....	5	1,087,753	—196,260	.....
1894, .....	5	812,353	—275,400	.....
1895, .....	5	1,080,020	+267,667	.....
1896, .....	5	948,460	—131,560	.....
1897, .....	5	1,077,926	+129,466	.....
1898, .....	5	1,045,926	—32,000	.....
1899, .....	5	1,135,696	+89,770	.....
1900, .....	5	1,326,416	+190,720	.....
1901, .....	5	973,529	—352,887	—310,484
CHENILLE GOODS.				
1892, .....	5	2,280,994	.....	.....
1893, .....	5	1,507,337	—773,657	.....

VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments considered.	Value of product.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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CHENILLE GOODS—Continued.

1894, .....	5	\$1,639,750	+\$132,413	\$
1895, .....	5	1,748,029	+108,279	.....
1896, .....	5	1,711,009	—37,020	.....
1897, .....	5	1,890,153	+179,144	.....
1898, .....	5	1,990,273	+100,120	.....
1899, .....	5	2,260,296	+270,023	.....
1900, .....	5	1,926,687	—333,609	.....
1901, .....	5	2,105,386	+178,699	—175,608

MIXED TEXTILES.

1892, .....	9	3,378,358	.....	.....
1893, .....	9	2,462,288	—916,070	.....
1894, .....	9	2,458,285	—4,003	.....
1895, .....	9	2,813,496	+355,211	.....
1896, .....	9	2,397,722	—415,774	.....
1897, .....	9	2,506,565	+108,843	.....
1898, .....	9	2,777,338	+270,773	.....
1899, .....	9	3,445,679	+668,341	.....
1900, .....	9	3,683,594	+237,915	.....
1901, .....	9	3,736,137	+52,543	+357,779

TAPESTRY AND TABLE COVERS.

1892, .....	3	370,648	.....	.....
1893, .....	3	301,223	—69,425	.....
1894, .....	3	309,906	+8,683	.....



## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of product.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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## TAPESTRY AND TABLE COVERS—Continued.

1905, .....	3	\$496,668	+\$186,762	\$
1896, .....	3	423,356	—73,312	.....
1897, .....	3	500,746	+77,390	.....
1898, .....	3	589,330	+88,584	.....
1899, .....	3	648,616	+59,286	.....
1900, .....	3	666,255	+17,639	.....
1901, .....	3	457,030	—209,225	+86,382

## HOSIERY.

1892, .....	13	3,006,366	.....	.....
1893, .....	13	2,429,258	—577,108	.....
1894, .....	13	2,090,722	—338,536	.....
1895, .....	13	2,819,230	+728,508	.....
1896, .....	13	2,131,116	—688,114	.....
1897, .....	13	2,451,639	+320,523	.....
1898, .....	13	2,592,249	+140,610	.....
1899, .....	13	2,679,349	+87,100	.....
1900, .....	13	2,615,498	—63,851	.....
1901, .....	13	2,558,590	—56,908	—447,776

## HOSIERY AND KNIT GOODS.

1892, .....	3	748,926	.....	.....
1893, .....	3	739,304	—9,622	.....
1894, .....	3	677,810	—61,494	.....
1895, .....	3	594,226	—83,584	.....

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of product.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
HOSIERY AND KNIT GOODS— Continued.				
1896, .....	3	\$459,551	—\$134,675	\$
1897, .....	3	541,180	+81,629	.....
1898, .....	3	521,697	—19,483	.....
1899, .....	3	607,414	+85,717	.....
1900, .....	3	583,170	—24,244	.....
1901, .....	3	596,327	+13,157	—152,599
SILK BROAD GOODS.				
1892, .....	4	3,118,034	.....	.....
1893, .....	4	1,176,070	—1,941,964	.....
1894, .....	4	2,624,564	+1,448,494	.....
1895, .....	4	3,250,176	+625,612	.....
1896, .....	4	2,873,300	—376,876	.....
1897, .....	4	3,979,336	+1,106,036	.....
1898, .....	4	4,554,525	+575,189	.....
1899, .....	4	5,598,713	+1,044,188	.....
1900, ....	4	5,048,800	—549,913	.....
1901, .....	4	4,948,756	—100,044	+1,830,722

## VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE.

COMPARISON OF VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

(In this table the value of the average annual product per employee by same establishments for each of the years 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 and 1901 is presented, with the relative increase or decrease, together with the increase or decrease 1901 over 1892. Forty-four industries, representing 354 establishments are considered.)

Character of Industry and Years.	Number of establishments considered.	Value of production during the year to each employee.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
PIG IRON.				
1892, .....	13	\$3,972 09	\$	\$
1893, .....	13	3,612 33	—\$359 76	.....
1894, .....	13	3,187 23	—425 10	.....
1895, .....	13	3,622 86	+435 63	.....
1896, .....	13	3,214 72	—408 14	.....
1897, .....	13	3,174 11	—40 61	.....
1898, .....	13	3,911 22	+737 11	.....
1899, .....	13	4,735 49	+824 27	.....
1900, .....	13	5,394 88	+659 39	.....
1901, .....	13	5,549 30	+154 42	+1,577 21
ROLLING MILLS—GENERAL PRODUCT.				
1892, .....	32	2,599 69	.....	.....
1893, .....	32	2,631 92	+32 23	.....
1894, .....	32	2,392 29	—239 63	.....
1895, .....	32	2,411 23	+18 94	.....
1896, .....	32	2,552 87	+141 64	.....
1897, .....	32	2,629 08	+76 21	.....

# VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE— Continued.

COMPARISON OF VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production during the year to each employe.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
ROLLING MILLS—GENERAL PRODUCT—Continued.				
1898, .....	32	\$2,786 68	+\$157 60	\$
1899, .....	32	3,887 22	+1,100 54	.....
1900, .....	32	6,636 51	+2,749 29	.....
1901, .....	32	5,085 39	—1,551 12	+2,485 70
IRON AND STEEL SHEETS AND PLATES.				
1892, .....	14	2,295 17	.....	.....
1893, .....	14	2,088 17	—207 00	.....
1894, .....	14	1,816 04	—272 13	.....
1895, .....	14	2,177 97	+361 93	.....
1896, .....	14	1,932 84	—245 13	.....
1897, .....	14	1,857 45	—75 39	.....
1898, .....	14	2,109 18	+251 73	.....
1899, .....	14	2,648 11	+538 93	.....
1900, .....	14	2,896 27	+248 16	.....
1901, .....	14	2,983 27	+87 00	+688 10
PLATE AND BAR.				
1892, .....	3	1,526 98	.....	.....
1893, .....	3	1,565 77	+38 79	.....
1894, .....	3	1,444 02	—121 75	.....
1895, .....	3	1,352 11	—91 91	.....
1896, .....	3	2,179 86	+827 75	.....
1897, .....	3	2,325 02	+145 16	.....

VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production during the year to each employe.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease(—) 1901 as compared with 1892.
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PLATE AND BAR—Continued.

1898, .....	3	\$1,272 43	—\$1,052 59	\$
1899, .....	3	2,020 16	+747 73	.....
1900, .....	3	1,463 79	—556 37	.....
1901, .....	3	2,262 63	+798 84	+735 65

STEEL.

1892, .....	13	1,889 99	.....	.....
1893, .....	13	1,776 62	—113 37	.....
1894, .....	13	1,614 02	—162 60	.....
1895, .....	13	1,704 39	+90 37	.....
1896, .....	13	1,650 73	—53 66	.....
1897, .....	13	1,684 65	+33 92	.....
1898, .....	13	1,669 45	—15 20	.....
1899, .....	13	2,049 20	+379 75	.....
1900, .....	13	3,044 97	+995 77	.....
1901, .....	13	2,156 34	—888 63	+266 35

ARCHITECTURAL CAST AND  
WROUGHT IRON WORK.

1892, .....	4	2,252 15	.....	.....
1893, .....	4	1,684 54	—567 61	.....
1894, .....	4	1,442 03	—242 51	.....
1895, .....	4	1,348 86	—93 17	.....
1896, .....	4	1,722 94	+374 08	.....
1897, .....	4	1,701 62	—21 32	.....
1898, .....	4	1,933 91	+232 29	.....



# VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE— Continued.

COMPARISON OF VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production during the year to each employee.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
ARCHITECTURAL CAST AND WROUGHT IRON WORK— Continued.				
1899, .....	4	\$1,791 39	—\$142 52	\$
1900, .....	4	2,524 77	+733 38	.....
1901, .....	4	2,772 12	+247 35	+519 97
IRON FORGING.				
1892, .....	4	1,806 33	.....	.....
1893, .....	4	1,557 19	—249 14	.....
1894, .....	4	1,288 08	—269 11	.....
1895, .....	4	1,312 40	+24 32	.....
1896, .....	4	1,300 50	—11 90	.....
1897, .....	4	1,298 13	—2 37	.....
1898, .....	4	1,546 91	+248 78	.....
1899, .....	4	2,696 85	+1,149 94	.....
1900, .....	4	7,334 85	+4,638 00	.....
1901, .....	4	7,048 96	—285 89	+5,242 63
NAILS AND SPIKES.				
1892, .....	10	1,601 16	.....	.....
1893, .....	10	1,388 28	—212 88	.....
1894, .....	10	1,421 17	+32 89	.....
1895, .....	10	1,498 77	+77 60	.....
1896, .....	10	1,123 56	—375 21	.....
1897, .....	10	1,690 37	+566 81	.....
1898, .....	10	1,188 32	—502 05	.....

VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production during the year to each employe.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
NAILS AND SPIKES—Continued.				
1899, .....	10	\$1,552 12	+\$363 80	\$
1900, .....	10	1,967 44	+415 32	.....
1901, .....	10	1,889 68	—77 76	+288 52
NUTS AND BOLTS.				
1892, .....	2	1,873 39	.....	.....
1893, .....	2	1,450 35	—423 04	.....
1894, .....	2	1,508 54	+58 19	.....
1895, .....	2	1,735 84	+227 30	.....
1896, .....	2	1,595 90	—139 94	.....
1897, .....	2	1,490 95	—104 95	.....
1898, .....	2	1,375 85	—115 10	.....
1899, .....	2	1,766 19	+390 34	.....
1900, .....	2	1,759 77	—6 42	.....
1901, .....	2	2,139 19	+379 42	+265 80
PIPES AND TUBES.				
1892, .....	4	1,678 04	.....	.....
1893, .....	4	1,607 63	—70 41	.....
1894, .....	4	1,526 32	—81 31	.....
1895, .....	4	1,738 20	+211 88	.....
1896, .....	4	2,156 31	+418 11	.....
1897, .....	4	1,991 07	—165 24	.....
1898, .....	4	2,148 82	+157 75	.....
1899, .....	4	2,689 20	+540 38	.....
1900, .....	4	2,854 40	+165 20	.....
1901, .....	4	2,560 03	—294 37	+881 99

VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production during the year to each employe.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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IRON FOUNDRIES AND MACHINE WORKS.

1892, .....	25	\$1,775 92	\$	\$
1893, .....	25	1,494 59	—281 33	.....
1894, .....	25	1,421 28	—73 31	.....
1895, .....	25	1,416 45	—4 83	.....
1896, .....	25	1,258 29	—158 16	.....
1897, .....	25	1,350 81	+92 52	.....
1898, .....	25	1,442 09	+91 28	.....
1899, .....	25	1,661 04	+218 95	.....
1900, .....	25	1,767 75	+106 71	.....
1901, .....	25	1,658 12	—109 63	—117 80

STOVES, RANGES, HEATERS,  
ETC.

1892, .....	9	1,319 34	.....	.....
1893, .....	9	1,120 79	—198 55	.....
1894, .....	9	984 55	—136 24	.....
1895, .....	9	1,113 76	+129 21	.....
1896, .....	9	1,067 25	—46 51	.....
1897, .....	9	1,106 91	+39 66	.....
1898, .....	9	1,115 55	+8 64	.....
1899, .....	9	1,379 53	+263 98	.....
1900, .....	9	1,387 74	+8 21	.....
1901, .....	9	1,326 90	—60 84	+7 56

VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production during the year to each employee.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
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HARDWARE.

1892, .....	4	\$794 07	\$	\$
1893, .....	4	742 22	—51 85	.....
1894, .....	4	710 39	—31 83	.....
1895, .....	4	791 71	+81 32	.....
1896, .....	4	771 72	—19 99	.....
1897, .....	4	687 59	—84 13	.....
1898, .....	4	830 66	+143 07	.....
1899, .....	4	1,048 66	+218 00	.....
1900, .....	4	988 26	—60 40	.....
1901, .....	4	1,101 36	+113 10	+307 29

MALLEABLE IRON.

1892, .....	2	1,128 09	.....	.....
1893, .....	2	1,001 68	—126 41	.....
1894, .....	2	1,011 51	+9 83	.....
1895, .....	2	1,000 43	—11 08	.....
1896, .....	2	932 10	—68 33	.....
1897, .....	2	938 31	+6 21	.....
1898, .....	2	1,011 04	+72 73	.....
1899, .....	2	1,190 22	+179 18	.....
1900, .....	2	1,213 04	+22 82	.....
1901, .....	2	1,077 06	—135 98	—51 03

VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production during the year to each employe.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
SAWS, EDGE TOOLS, ETC.				
1892, .....	5	\$1,421 23	\$	\$
1893, .....	5	1,449 54	+28 31	.....
1894, .....	5	1,222 81	—226 73	.....
1895, .....	5	1,332 04	+109 23	.....
1896, .....	5	1,258 09	—73 95	.....
1897, .....	5	1,188 94	—69 15	.....
1898, .....	5	1,270 43	+81 49	.....
1899, .....	5	1,480 75	+210 32	.....
1900, .....	5	1,503 95	+23 20	.....
1901, .....	5	1,516 51	+12 56	+95 28
METAL AND METALLIC GOODS.				
1892, .....	8	1,753 99	.....	.....
1893, .....	8	1,557 57	—196 42	.....
1894, .....	8	1,373 64	—183 93	.....
1895, .....	8	1,661 57	+287 93	.....
1896, .....	8	1,464 41	—197 16	.....
1897, .....	8	1,545 26	+80 85	.....
1898, .....	8	1,908 52	+363 26	.....
1899, .....	8	2,267 07	+358 55	.....
1900, .....	8	1,684 65	—582 42	.....
1901, .....	8	1,717 21	+32 56	—36 78
LOCOMOTIVES AND ENGINES.				
1892, .....	14	1,481 86	.....	.....
1893, .....	14	1,454 98	—26 88	.....



VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production during the year to each employe.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892
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LOCOMOTIVES AND ENGINES—  
Continued.

1894, .....	14	\$1,140 81	—\$314 17	\$
1895, .....	14	1,357 39	+216 58	.....
1896, .....	14	1,402 87	+45 48	.....
1897, .....	14	1,427 33	+24 46	.....
1898, .....	14	1,568 90	+141 57	.....
1899, .....	14	1,717 66	+148 76	.....
1900, .....	14	1,914 87	+197 21	.....
1901, .....	14	1,942 96	+28 09	+461 10

ENGINES AND BOILERS.

1892, .....	6	1,745 82	.....	.....
1893, .....	6	1,659 43	—86 39	.....
1894, .....	6	1,638 23	—21 20	.....
1895, .....	6	1,568 55	—69 68	.....
1896, .....	6	1,561 21	—7 34	.....
1897, .....	6	1,476 34	—84 87	.....
1898, .....	6	1,675 63	+199 29	.....
1899, .....	6	1,982 15	+306 52	.....
1900, .....	6	2,171 77	+189 62	.....
1901, .....	6	1,994 31	—177 46	+248 49

BOILERS.

1892, .....	7	2,320 26	.....	.....
1893, .....	7	2,098 19	—222 07	.....
1894, .....	7	1,513 95	—584 24	.....

# VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYE— Continued.

COMPARISON OF VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYE BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production during the year to each employe.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
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## BOILERS—Continued.

1895, .....	7	\$1,428 68	—\$85 27	\$ .....
1896, .....	7	1,393 01	—25 67	.....
1897, .....	7	1,361 24	—31 77	.....
1898, .....	7	1,783 65	+422 41	.....
1899, .....	7	2,487 16	+703 51	.....
1900, .....	7	2,478 58	—8 58	.....
1901, .....	7	2,663 74	+185 16	+343 48

## BRIDGES.

1892, .....	4	1,791 05	.....	.....
1893, .....	4	2,069 25	+278 20	.....
1894, .....	4	1,997 17	—72 08	.....
1895, .....	4	1,848 78	—148 39	.....
1896, .....	4	1,805 59	—43 19	.....
1897, .....	4	1,875 35	+69 76	.....
1898, .....	4	2,181 73	+336 38	.....
1899, .....	4	2,818 56	+636 83	.....
1900, .....	4	3,992 29	+1,173 73	.....
1901, .....	4	2,450 30	—1,541 99	+659 25

## CAR SPRINGS.

1892, .....	1	5,503 48	.....	.....
1893, .....	1	3,768 74	—1,734 74	.....
1894, .....	1	3,064 91	—703 83	.....
1895, .....	1	4,644 71	+1,579 80	.....

VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production during the year to each employee.	Increase(+) or decrease(—) as compared with the preceding year.	Increase(+) or decrease(—) 1901 as compared with 1892.
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CAR SPRINGS—Continued.

1896, .....	1	\$4,497 57	—\$147 14	\$
1897, .....	1	3,426 17	—1,071 40	.....
1898, .....	1	4,661 68	+1,235 51	.....
1899, .....	1	5,906 26	+1,244 58	.....
1900, .....	1	6,455 32	+549 06	.....
1901, .....	1	6,015 13	—440 19	+511 65

CAR COUPLERS.

1892, .....	1	2,194 79	.....	.....
1893, .....	1	1,770 68	—424 09	.....
1894, .....	1	1,227 72	—542 96	.....
1895, .....	1	1,625 84	+398 12	.....
1896, .....	1	1,382 50	—243 34	.....
1897, .....	1	1,295 03	—87 47	.....
1898, .....	1	1,793 89	+498 86	.....
1899, .....	1	1,843 45	+49 56	.....
1900, .....	1	1,742 21	—101 24	.....
1901, .....	1	1,299 14	—443 07	—895 65

CARS AND CAR WHEELS.

1892, .....	8	2,221 09	.....	.....
1893, .....	8	1,925 06	—295 23	.....
1894, .....	8	1,445 47	—480 39	.....
1895, .....	8	1,486 28	+40 81	.....
1896, .....	8	1,481 38	—4 90	.....

# VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE— Continued.

COMPARISON OF VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of production during the year to each employee.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
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## CARS AND CAR WHEELS—Con- tinued.

1897, .....	8	\$1,227 07	—\$254 31	\$
1898, .....	8	1,176 04	—51 03	.....
1899, .....	8	1,673 88	+497 84	.....
1900, .....	8	1,925 24	+251 36	.....
1901, .....	8	1,721 50	—203 74	—499 59

## WINDOW GLASS, BOTTLE AND TABLE GOODS.

1892, .....	17	909 06	.....	.....
1893, .....	17	754 88	—154 18	.....
1894, .....	17	896 78	+141 90	.....
1895, .....	17	695 17	—201 60	.....
1896, .....	17	815 43	+120 26	.....
1897, .....	17	989 66	+174 23	.....
1898, .....	17	1,021 22	+31 56	.....
1899, .....	17	1,074 68	+53 46	.....
1900, .....	17	974 15	—100 53	.....
1901, .....	17	969 66	—4 49	+60 60

## SHIP BUILDING.

1892, .....	1	1,140 35	.....	.....
1893, .....	1	1,428 34	+287 99	.....
1894, .....	1	1,281 50	—146 84	.....
1895, .....	1	1,268 76	—12 74	.....
1896, .....	1	1,330 85	+62 09	.....

VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production during the year to each employee.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
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SHIP BUILDING—Continued.

1897, .....	1	\$1,229 04	—\$101 81	\$
1898, .....	1	1,503 07	+274 03	.....
1900, .....	1	1,659 90	+12 31	.....
1901, .....	1	1,601 57	—58 33	+461 22

PIANOS AND ORGANS.

1892, .....	2	1,213 29	.....	.....
1893, .....	2	1,055 37	—157 92	.....
1894, .....	2	863 08	—192 29	.....
1895, .....	2	1,134 59	+271 51	.....
1896, .....	2	1,109 59	—25 00	.....
1897, .....	2	1,165 94	+56 35	.....
1898, .....	2	1,189 06	+23 12	.....
1899, .....	2	1,427 33	+238 27	.....
1900, .....	2	1,259 57	—167 76	.....
1901, .....	2	1,234 95	—24 62	+21 66

RUBBER BOOTS AND SHOES.

1892, .....	1	2,305 34	.....	.....
1893, .....	1	2,416 25	+110 91	.....
1894, .....	1	2,031 59	—384 66	.....
1895, .....	1	2,109 43	+77 84	.....
1896, .....	1	2,263 29	+153 86	.....
1897, .....	1	1,652 71	—610 58	.....



# VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE— Continued.

COMPARISON OF VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production during the year to each employee.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
RUBBER BOOTS AND SHOES— Continued.				
1898, .....	1	\$2,402 31	+\$749 60	\$
1899, .....	1	2,164 52	—237 79	.....
1900, .....	1	2,118 84	—45 68	.....
1901, .....	1	1,836 24	—282 60	—469 10
CARBONS.				
1892, .....	1	1,229 17	.....	.....
1893, .....	1	1,400 00	+170 83	.....
1894, .....	1	1,545 45	+145 45	.....
1895, .....	1	1,561 22	+15 77	.....
1897, .....	1	1,500 00	—100 00	.....
1896, .....	1	1,600 00	+38 78	.....
1898, .....	1	1,400 00	—100 00	.....
1899, .....	1	1,736 84	+336 84	.....
1900, .....	1	1,626 13	—110 71	.....
1901, .....	1	1,601 21	—24 92	+372 04
CARPETS.				
1892, .....	24	1,720 62	.....	.....
1893, .....	24	1,524 17	—196 45	.....
1894, .....	24	1,543 90	+19 73	.....
1895, .....	24	1,578 64	+34 74	.....
1896, .....	24	1,422 24	—156 40	.....
1897, .....	24	1,577 68	+155 44	.....
1898, .....	24	1,590 33	+12 65	.....

# VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYE— Continued.

COMPARISON OF VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYE BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production during the year to each employe.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
CARPETS—Continued.				
1899, .....	24	\$1,616 65	+\$26 32	\$
1900, .....	24	1,663 36	+46 71	.....
1901, .....	24	1,613 74	—49 62	—106 88
WOOLEN YARNS.				
1892, .....	10	1,739 25	.....	.....
1893, .....	10	1,659 86	—79 39	.....
1894, .....	10	1,741 45	+81 59	.....
1895, .....	10	1,609 17	—132 28	.....
1896, .....	10	1,756 87	+147 70	.....
1897, .....	10	1,829 34	+72 47	.....
1898, .....	10	2,043 33	+213 99	.....
1899, .....	10	2,369 73	+326 40	.....
1900, .....	10	2,434 96	+65 23	.....
1901, .....	10	2,440 86	+5 90	+701 61
COTTON YARNS.				
1892, .....	3	2,180 91	.....	.....
1893, .....	3	1,991 87	—189 04	.....
1894, .....	3	1,625 56	—366 31	.....
1895, .....	3	1,702 39	+76 83	.....
1896, .....	3	1,841 33	+138 94	.....
1897, .....	3	1,897 65	+56 32	.....
1898, .....	3	1,675 86	—221 79	.....
1899, .....	3	1,743 44	+67 58	.....
1900, .....	3	2,078 43	+334 99	.....
1901, .....	3	1,863 99	—214 44	—316 92

# VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE— Continued.

COMPARISON OF VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production during the year to each employee.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
WORSTED YARNS.				
1892, .....	3	\$1,689 33	\$	\$
1893, .....	3	1,453 79	—235 54	.....
1894, .....	3	1,429 14	—24 65	.....
1895, .....	3	1,291 57	—137 57	.....
1896, .....	3	1,197 56	—94 01	.....
1897, .....	3	1,457 89	+260 33	.....
1898, .....	3	1,196 68	—261 21	.....
1899, .....	3	1,784 84	+588 16	.....
1900, .....	3	1,894 78	+109 94	.....
1901, .....	3	1,672 25	—222 53	—17 08
MISCELLANEOUS YARNS.				
1892, .....	9	2,373 18	.....	.....
1893, .....	9	1,864 58	—508 60	.....
1894, .....	9	1,828 78	—35 80	.....
1895, .....	9	2,019 11	+190 33	.....
1896, .....	9	1,853 30	—165 81	.....
1897, .....	9	2,430 30	+557 00	.....
1898, .....	9	2,041 14	—389 16	.....
1899, .....	9	2,440 40	+399 26	.....
1900, .....	9	2,706 18	+265 78	.....
1901, .....	9	2,692 83	—13 35	+319 65
WOOLEN GOODS.				
1892, .....	16	1,713 39	.....	.....
1893, .....	16	1,423 98	—289 41	.....

VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production during the year to each employee.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
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WOOLEN GOODS—Continued.

1894, .....	16	\$1,224 48	—\$199 50	\$
1895, .....	16	1,247 54	+23 06	.....
1896, .....	16	1,330 10	+82 56	.....
1897, .....	16	1,492 37	+162 27	.....
1898, .....	16	1,515 04	+22 67	.....
1899, .....	16	1,688 97	+173 93	.....
1900, .....	16	1,592 55	—96 42	.....
1901, .....	16	1,726 65	+134 10	+13 26

COTTON GOODS.

1892, .....	17	2,180 74	.....	.....
1893, .....	17	1,823 12	—357 62	.....
1894, .....	17	1,945 19	+122 07	.....
1895, .....	17	1,706 47	—238 72	.....
1896, .....	17	1,581 30	—125 17	.....
1897, .....	17	1,747 01	+165 71	.....
1898, .....	17	1,756 93	+9 92	.....
1899, .....	17	2,007 55	+250 62	.....
1900, .....	17	1,838 54	—169 01	.....
1901, .....	17	2,143 04	+304 50	—37 70

COTTON AND WOOLEN GOODS.

1892, .....	12	1,580 34	.....	.....
1893, .....	12	1,330 35	—249 99	.....
1894, .....	12	1,128 44	—201 91	.....
1895, .....	12	1,101 03	—27 41	.....

# VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE— Continued.

COMPARISON OF VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production during the year to each employee.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
COTTON AND WOOLEN GOODS— Continued.				
1896, .....	12	\$1,097 04	—\$3 99	\$
1897, .....	12	1,278 68	+181 64	.....
1898, .....	12	1,200 63	—78 05	.....
1899, .....	12	1,509 27	+308 64	.....
1900, .....	12	1,461 06	—48 21	.....
1901, .....	12	1,408 21	—52 85	—172 13
WORSTED GOODS.				
1892, .....	3	2,107 75	.....	.....
1893, .....	3	1,953 45	—154 30	.....
1894, .....	3	2,044 37	+90 92	.....
1895, .....	3	1,875 76	—168 61	.....
1896, .....	3	1,638 38	—237 38	.....
1897, .....	3	2,150 63	+512 25	.....
1898, .....	3	2,250 24	+99 61	.....
1899, .....	3	2,316 25	+66 01	.....
1900, .....	3	2,441 12	+124 87	.....
1901, .....	3	2,234 82	—206 30	+127 07
KNIT GOODS.				
1892, .....	5	1,298 29	.....	.....
1893, .....	5	1,117 93	—180 36	.....
1894, .....	5	1,006 63	—111 30	.....
1895, .....	5	1,027 61	+20 98	.....
1896, .....	5	974 78	—52 83	.....



VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of production during the year to each employee.	Increase(+) or decrease (-) as com- pared with the preced- ing year.	Increase (+) or de- crease(-) 1901 as compared with 1896.
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KNIT GOODS—Continued.

1897, .....	5	\$1,067 25	+\$92 47	\$
1898, .....	5	1,067 27	+02	.....
1899, .....	5	1,131 17	+63 90	.....
1900, .....	5	1,046 07	—85 10	.....
1901, .....	5	914 97	—131 10	—383 32

CHENILLE GOODS.

1892, .....	5	1,446 41	.....	.....
1893, .....	5	1,307 32	—139 09	.....
1894, .....	5	1,394 35	+87 03	.....
1895, .....	5	1,470 17	+75 82	.....
1896, .....	5	1,241 66	—228 51	.....
1897, .....	5	1,225 08	—16 58	.....
1898, .....	5	1,263 67	+38 59	.....
1899, .....	5	1,400 43	+136 76	.....
1900, .....	5	1,316 94	—83 49	.....
1901, .....	5	1,411 12	+94 18	—35 29

MIXED TEXTILES.

1892, .....	9	1,669 10	.....	.....
1893, .....	9	1,458 70	—210 40	.....
1894, .....	9	1,330 96	—127 74	.....
1895, .....	9	1,387 30	+56 34	.....
1896, .....	9	1,265 95	—121 35	.....
1897, .....	9	1,237 81	—28 14	.....

VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production during the year to each employe.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
MIXED TEXTILES—Continued.				
1898, .....	9	\$1,310 06	+\$72 25	\$
1899, .....	9	1,417 39	+107 33	.....
1900, .....	9	1,323 61	—93 78	.....
1901, .....	9	1,413 06	+89 45	—256 04
TAPESTRY AND TABLE COVERS.				
1892, .....	3	1,647 32	.....	.....
1893, .....	3	1,610 82	—36 50	.....
1894, .....	3	1,353 30	—257 52	.....
1895, .....	3	1,523 52	+170 22	.....
1896, .....	3	1,430 26	—93 26	.....
1897, .....	3	1,274 16	—156 10	.....
1898, .....	3	1,275 60	+1 44	.....
1899, .....	3	1,318 32	+42 72	.....
1900, .....	3	1,417 56	+99 24	.....
1901, .....	3	1,446 30	+28 74	—201 02
HOSIERY.				
1892, .....	13	1,021 18	.....	.....
1893, .....	13	917 74	—103 44	.....
1894, .....	13	807 54	—110 20	.....
1895, .....	13	846 87	+39 33	.....
1896, .....	13	786 97	—59 90	.....
1897, .....	13	813 95	+26 98	.....
1898, .....	13	807 05	—6 90	.....

VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE BY SAME ESTABLISHMENTS FOR THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production during the year to each employe.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
HOSIERY—Continued.				
1899, .....	13	\$836 25	+\$29 20	\$ .....
1900, .....	13	839 38	+3 13	.....
1901, .....	13	882 27	+42 89	—138 91
HOSIERY AND KNIT GOODS.				
1892, .....	3	1,258 70	.....	.....
1893, .....	3	1,211 97	—46 73	.....
1894, .....	3	1,129 68	—82 29	.....
1895, .....	3	946 22	—183 46	.....
1896, .....	3	1,014 46	+68 24	.....
1897, .....	3	1,005 91	—8 55	.....
1898, .....	3	1,107 64	+101 73	.....
1899, .....	3	1,322 02	+214 38	.....
1900, .....	3	1,121 48	—200 54	.....
1901, .....	3	1,247 55	+126 07	—11 15
SILK BROAD GOODS.				
1892, .....	4	1,796 10	.....	.....
1893, .....	4	1,077 09	—719 01	.....
1894, .....	4	1,815 05	+737 96	.....
1895, .....	4	1,694 56	—120 49	.....
1896, .....	4	1,553 14	—141 42	.....
1897, .....	4	1,492 06	—61 08	.....
1898, .....	4	1,536 61	+44 55	.....
1899, .....	4	1,754 54	+217 93	.....
1900, .....	4	1,644 56	—109 98	.....
1901, .....	4	1,506 47	—138 09	—289 63

## YEAR 1892.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Character of Industries.	Number of establishments considered.	Average number of days in operation.	Total number of persons employed.	Aggregate amount of wages paid.	Average yearly earnings.	Value of product.
Pig iron, .....	13	321	2,668	\$1,222,091	\$477 92	\$10,537,537
Rolling mills—general product,	32	314	55,368	19,909,005	562 91	91,945,908
Iron and steel sheets and plates, .....	14	290	5,089	3,225,444	633 81	11,680,127
Plate and bar, .....	3	250	3,269	1,655,275	515 53	4,991,702
Steel, .....	13	281	13,075	6,601,181	504 87	24,711,573
Architectural cast and wrought iron work, .....	4	307	1,350	810,020	600 01	3,040,397
Iron forging, .....	4	262	583	379,070	650 21	1,053,031
Nails and spikes, .....	10	256	3,015	1,294,034	429 19	4,827,506
Nuts and bolts, .....	2	306	615	238,112	387 17	1,152,138
Pipes and tubes, .....	4	267	1,336	575,531	430 78	2,241,867
Iron foundries and machine works, .....	25	301	3,554	1,967,645	553 64	6,311,627
Stoves, ranges, heaters, etc., ..	9	284	1,243	630,622	507 84	1,639,839
Hardware, .....	4	295	1,565	608,700	388 94	1,242,721
Malleable iron, .....	2	302	401	207,159	516 61	452,363
Saws, edge tools, etc., .....	5	302	2,448	1,306,442	533 68	3,479,164
Metal and metallic goods, .....	8	321	1,723	833 385	482 84	3,027,395
Locomotives and engines, .....	14	305	11,591	6,941,946	598 90	17,176,167
Engines and boilers, .....	6	323	1,635	820,391	536 72	2,854,422
Boilers, .....	7	277	762	394,594	419 41	1,768,039
Bridges, .....	4	310	1,217	532,673	437 62	2,179,715
Car springs, .....	1	312	207	139,800	675 36	1 13 1,220
Car couplers, .....	1	310	663	361,338	545 00	1,455 135
Cars and car wheels, .....	8	301	3,566	1,901,062	533 11	7,920,412
Ship building, .....	1	310	440	242,358	550 80	501 753
Rubber boots and shoes, .....	1	250	325	141,784	436 25	749,235
Woolen yarns, .....	10	299	1,805	527,864	283 03	3,243,694
Cotton yarns, .....	3	296	259	84,571	226 53	564,857
Worsted yarns, .....	3	300	1,002	298,131	297 53	1,692,713
Miscellaneous yarns, .....	9	202	544	212,052	389 80	1,291,613
Hosiery, .....	13	236	2,914	770,891	261 85	3,006,3 6
Hosiery and knit goods, .....	3	300	595	197,312	331 61	748,926

## YEAR 1892—Continued.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Character of Industries.	Number of estab- lishments consid- ered.	Average number of days in opera- tion.	Total number of per- sons em- ployed.	Aggre- gate amount of wages paid.	Average yearly earnings.	Value of product.
Carpets, .....	24	280	6,750	\$2,573,458	\$81 24	\$11,614 157
Cotton and woolen goods, .....	12	301	1,397	483,504	346 10	2,207,731
Cotton goods, .....	17	303	4,308	1,656,805	384 58	9,394,632
Woolen goods, .....	16	299	5,573	1,593,364	350 51	9,548,699
Knlt goods, .....	5	313	989	286,648	289 84	1,284,013
Worsted goods, .....	3	310	661	239,858	362 87	1,332,225
Mixed textiles, .....	9	303	2,024	712,059	351 81	3,378,388
Chenille goods, .....	5	322	1,577	648,492	411 21	2,280,994
Tapestry and table covers, .....	3	302	225	94,620	420 53	370,618
Silk broad goods, .....	4	304	1,736	430,455	247 96	3,118,034
Window glass, bottle and table goods, .....	17	253	6,512	3,013,108	462 70	5,919,793
Pianos and organs, .....	2	303	162	53,972	333 16	196,553
Carbons, .....	1	300	48	25,000	520 83	59,000
Totals, .....	354	294	136,882	\$67,331,876	\$191 90	\$269,452,465



## YEAR 1893.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Character of Industries.	Number of establishments considered.	Average number of days in operation.	Total number of persons employed.	Aggregate amount of wages paid.	Average yearly earnings.	Value of product.
Pig iron, .....	13	286	2,222	\$968,289	\$446 14	\$8,026,593
Rolling mills—general product,	32	307	32,695	17,884,919	547 02	86,050,594
Iron and steel sheets and plates, .....	13	243	4,590	2,658,514	579 19	9,584,689
Plate and bar, .....	3	198	2,330	1,150,276	493 68	3,648,252
Steel, .....	14	270	10,585	5,234,148	494 49	18,805,567
Architectural cast and wrought iron work, .....	4	308	1,202	699,209	581 70	2,024,821
Iron forging, .....	4	244	507	302,651	596 95	789,496
Nails and spikes, .....	10	230	2,840	1,130,151	397 94	3,942,713
Nuts and bolts, .....	2	305	695	235,777	339 24	1,007,993
Pipes and tubes, .....	4	260	1,311	519,129	395 98	2,107,604
Iron foundries and machine works, .....	25	279	3,097	1,533,465	495 14	4,628,768
Stoves, ranges, heaters, etc., ..	9	272	1,361	674,514	496 33	1,525,891
Hardware, .....	4	249	1,544	581,468	376 59	1,145,987
Malleable iron, .....	2	262	362	167,644	463 11	362,608
Saws, edge tools, etc., .....	5	284	2,210	1,166,262	527 72	3,203,476
Metal and metallic goods, .....	8	282	1,622	738,036	455 02	2,526,382
Locomotives and engines, .....	14	284	11,644	6,528,803	560 70	16,941,708
Engines and boilers, .....	6	289	1,384	658,487	510 03	2,296,655
Boilers, .....	7	250	722	285,385	393 67	1,514,899
Bridges, .....	4	305	971	413,517	425 86	2,009,234
Car springs, .....	1	312	187	104,498	558 81	704,754
Car couplers, .....	1	243	570	281,375	493 64	1,009,284
Cars and car wheels, .....	8	282	3,144	1,579,523	502 39	6,054,890
Ship building, .....	1	309	583	324,439	556 49	832,720
Rubber boots and shoes, .....	1	230	350	145,471	415 63	845,688
Woolen yarns, .....	10	245	1,471	428,848	291 53	2,441,663
Cotton yarns, .....	3	250	233	71,384	306 36	464,105
Miscellaneous yarns, .....	9	252	477	150,765	316 07	889,403
Hosiery, .....	13	261	2,647	660,803	249 64	2,429,258
Worsted yarns, .....	3	199	708	211,833	299 20	1,029,283
Hosiery and knit goods, .....	3	293	610	186,860	306 32	739,304

## YEAR 1893—Continued.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Character of Industries.	Number of establishments considered.	Average number of days in operation.	Total number of persons employed.	Aggregate amount of wages paid.	Average yearly earnings.	Value of product.
Carpets, .....	24	218	5,660	\$2,085,404	\$368 45	\$8,626,792
Cotton and woolen goods, .....	12	255	1,260	390,597	310 00	1,676,241
Cotton goods, .....	17	249	3,874	1,186,610	306 30	7,027,762
Woolen goods, .....	16	245	4,926	1,527,954	310 19	7,014,527
Knit goods, .....	5	278	973	255,488	262 53	1,077,753
Worsted goods, .....	3	222	386	135,561	351 18	754,032
Mixed textiles, .....	9	290	1,688	520,683	308 40	2,462,183
Chenille goods, .....	5	295	1,153	435,761	377 93	1,567,337
Tapestry and table covers, .....	3	291	187	68,484	312 98	311,223
Silk broad goods, .....	4	247	1,092	248,372	227 45	1,176,070
Window glass, bottle and table goods, .....	17	195	5,993	2,209,369	368 66	4,523,986
Pianos and organs, .....	2	280	162	50,583	312 24	170,969
Carbons, .....	1	309	50	27,000	540 00	70,000
<b>Totals, .....</b>	<b>354</b>	<b>268</b>	<b>122,278</b>	<b>\$56,818,289</b>	<b>\$464 66</b>	<b>\$226,017,762</b>

## YEAR 1894.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Character of Industries.	Number of establishments considered.	Average number of days in operation.	Total number of persons employed.	Aggregate amount of wages paid.	Average yearly earnings.	Value of product.
Pig iron, .....	13	301	1,751	\$658,393	\$382 09	\$5,580,847
Rolling mills—general product,	32	300	30,120	14,537,538	482 65	72,055,767
Iron and steel sheets and plates, .....	14	267	4,294	2,251,379	524 31	7,798,069
Plate and bar, .....	3	232	1,785	696,970	401 71	2,505,387
Steel, .....	13	272	9,778	4,492,128	459 41	15,781,822
Architectural cast and wrought iron work, .....	4	307	976	488,190	500 19	1,407,416
Iron forging, .....	4	296	469	237,457	506 31	604,106
Nails and spikes, .....	10	228	2,305	770,354	234 21	3,275,789
Nuts and bolts, .....	2	288	560	218,854	372 15	844,732
Pipes and tubes, .....	4	268	1,263	513,268	406 38	1,927,748
Iron foundries and machine works, .....	25	282	2,603	1,313,309	504 53	3,699,597
Stoves, ranges, heaters, etc., ..	9	210	1,238	526,222	425 06	1,218,872
Hardware, .....	4	205	1,464	494,538	237 79	1,040,023
Malleable iron, .....	2	247	293	129,634	442 44	26,371
Saws, edge tools, etc., .....	5	286	1,965	872,555	444 05	2,402,820
Metal and metallic goods, .....	8	288	1,500	675,524	450 35	2,060,465
Locomotives and engines, .....	14	267	8,441	4,032,483	477 72	9,623,617
Engines and boilers, .....	6	298	992	521,260	528 49	1,625,120
Boilers, .....	7	220	691	220,692	319 23	1,046,140
Bridges, .....	4	305	647	262,240	405 31	1,232,171
Car springs, .....	1	255	108	49,664	459 85	331,010
Car couplers, .....	1	203	416	160,978	386 96	510,732
Cars and car wheels, .....	8	261	2,830	1,292,310	456 65	4,090,697
Ship building, .....	1	310	395	226,858	574 22	506,192
Rubber boots and shoes, .....	1	248	350	128,156	366 16	711,056
Woolen yarns, .....	10	277	1,148	286,557	249 61	1,999,184
Cotton yarns, .....	3	261	270	70,983	262 90	438,901
Worsted yarns, .....	3	277	722	201,584	279 20	1,031,841
Miscellaneous yarns, .....	9	262	418	128,072	330 31	764,435
Hosiery, .....	13	273	2,589	567,411	219 16	2,090,722
Hosiery and knit goods, .....	3	300	600	191,806	319 67	677,810

## YEAR 1894—Continued.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Character of Industries.	Number of establishments considered.	Average number of days in operation.	Total number of persons employed.	Aggregate amount of wages paid.	Average yearly earnings.	Value of product.
Carpets, .....	24	254	5,326	\$1,002,657	\$355 30	\$8,222,838
Cotton and woolen goods, .....	12	258	1,248	362,164	290 19	1,408,296
Cotton goods, .....	17	246	3,687	1,171,554	317 75	7,171,910
Woolen goods, .....	16	278	4,856	1,358,781	286 00	5,946,052
Knit goods, .....	5	254	807	205,732	254 93	82,353
Worsted goods, .....	3	237	461	158,743	344 35	942,475
Mixed textiles, .....	9	289	1,847	531,680	287 86	2,458,285
Chenille goods, .....	5	239	1,176	442,828	376 55	1,659,750
Tapestry and table covers, .....	3	300	229	91,722	400 53	369,906
Silk broad goods, .....	4	292	1,446	362,119	250 00	2,624,564
Window glass, bottle and table goods, .....	17	261	5,152	2,219,127	430 73	4,620,213
Pianos and organs, .....	2	259	162	46,187	285 10	139,813
Carbons, .....	1	300	55	29,000	527 28	85,000
Totals, .....	354	276	109,383	\$45,221,667	\$413 50	\$185,626,971

## YEAR—1895.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Character of Industries.	Number of establishments considered.	Average number of days in operation.	Total number of persons employed.	Aggregate amount of wages paid.	Average yearly earnings.	Value of product.
Pig iron, .....	13	327	2,269	\$1,060,012	\$488 66	\$8,220,166
Rolling mills—general product,	32	310	35,123	17,620,324	501 65	84,689,471
Iron and steel sheets and plates, .....	14	307	4,869	2,728,209	560 32	10,604,551
Plate and bar, .....	3	257	2,263	864,145	381 86	3,059,825
Steel, .....	13	279	12,138	5,872,084	483 78	20,687,948
Architectural cast and wrought iron work, .....	4	306	1,438	786,657	547 05	1,930,661
Iron forging, .....	4	289	594	311,275	524 03	779,509
Nails and spikes, .....	10	220	2,422	848,142	350 18	3,630,012
Nuts and bolts, .....	2	291	628	257,202	403 13	1,107,466
Pipes and tubes, .....	4	288	1,454	646,083	414 34	2,527,348
Iron foundries and machine works, .....	25	299	3,066	1,571,056	512 41	4,342,835
Stoves, ranges, heaters, etc., ..	9	229	1,285	575,802	448 09	1,411,181
Hardware, .....	4	260	1,586	589,411	371 63	1,255,661
Malleable iron, .....	2	272	367	185,490	505 42	367,157
Saws, edge tools, etc., .....	5	294	2,188	1,078,514	538 62	2,911,553
Metal and metallic goods, .....	8	311	1,704	829,877	487 02	2,831,319
Locomotives and engines, .....	14	292	9,263	5,231,956	558 79	12,703,222
Engines and boilers, .....	6	292	1,226	647,889	533 66	1,923,041
Boilers, .....	7	205	694	253,044	364 61	991,505
Bridges, .....	4	303	970	450,391	464 32	1,733,317
Car springs, .....	1	277	107	67,556	631 36	456,984
Car couplers, .....	1	285	606	304,785	502 94	985,258
Cars and car wheels, .....	8	303	2,887	1,533,033	531 01	4,291,747
Ship building, .....	1	307	336	190,820	567 91	426,313
Rubber boots and shoes, .....	1	271	398	150,705	378 65	89,553
Woolen yarns, .....	10	293	1,616	424,006	262 38	2,600,417
Cotton yarns, .....	3	288	294	89,806	305 46	500,564
Worsted yarns, .....	3	301	1,006	278,890	277 22	1,299,327
Miscellaneous yarns, .....	9	284	445	159,564	358 57	898,508
Hosiery, .....	13	294	3,329	863,884	279 50	2,819,130
Hosiery and knit goods, .....	3	272	628	179,494	285 81	594,226



## YEAR 1895—Continued.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Character of Industries.	Number of establishments considered.	Average number of days in operation.	Total number of persons employed.	Aggregate amount of wages paid.	Average yearly earnings.	Value of product.
Carpets, .....	24	277	5,907	\$2,228,021	\$374 48	\$9,325,013
Cotton and woollen goods, .....	12	265	1,370	420,075	386 62	1,508,407
Cotton goods, .....	17	285	3,925	1,303,844	332 19	6,697,883
Woollen goods, .....	16	298	5,405	1,694,440	313 49	6,742,988
Knit goods, .....	5	283	1,051	288,841	274 82	1,080,020
Worsted goods, .....	3	265	547	192,633	352 16	1,026,041
Mixed textiles, .....	9	298	2,028	615,035	303 30	2,813,496
Chenille goods, .....	5	300	1,189	460,319	387 14	1,748,029
Tapestry and table covers, .....	3	295	326	124,723	382 64	456,668
Silk broad goods, .....	4	303	1,918	449,854	234 54	3,250,176
Window glass, bottle and table goods, .....	17	241	6,195	2,198,916	354 95	4,306,614
Pianos and organs, .....	2	290	142	49,644	349 61	161,111
Carbons, .....	1	300	49	28,000	571 43	76,500
Totals, .....	354	288	127,361	\$6,704,511	\$445 78	\$222,730,931

## YEAR 1896.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Character of Industries.	Number of establishments considered.	Average number of days in operation.	Total number of persons employed.	Aggregate amount of wages paid.	Average yearly earnings.	Value of product.
Pig iron, .....	13	293	2,242	\$947,503	\$422 61	\$7,207,417
Rolling mills—general product,	32	308	34,755	17,829,462	513 00	88,725,133
Iron and steel sheets and plates, .....	14	258	4,522	2,390,653	528 67	8,740,103
Plate and bar, .....	3	229	1,295	596,165	460 36	2,822,922
Steel, .....	13	219	10,058	4,592,017	456 55	16,603,631
Architectural cast and wrought iron work, .....	4	305	1,298	718,716	553 71	2,286,372
Iron forging, .....	4	246	569	295,092	518 62	739,585
Nails and spikes, .....	10	205	1,891	527,201	278 79	2,124,658
Nuts and bolts, .....	2	298	530	211,195	398 48	845,826
Pipes and tubes, .....	4	296	1,326	658,449	421 15	2,837,296
Iron foundries and machine works, .....	25	289	2,794	1,384,299	495-45	3,515,683
Stoves, ranges, heaters, etc., ..	9	222	1,296	559,614	431 80	1,383,157
Hardware, .....	4	260	1,464	506,748	346 14	1,129,793
Malleable iron, .....	2	270	445	206,976	465 11	414,756
Saws, edge tools, etc., .....	5	279	2,171	1,033,069	498 88	2,731,311
Metal and metallic goods, .....	8	304	1,640	812,633	495 51	2,401,636
Locomotives and engines, .....	14	291	10,228	5,402,517	528 21	14,348,550
Engines and boilers, .....	6	291	1,326	647,307	488 16	2,070,170
Boilers, .....	7	209	747	231,665	310 13	1,040,575
Bridges, .....	4	285	738	293,005	397 03	1,332,526
Car springs, .....	1	255	115	76,031	661 14	517,221
Car couplers, .....	1	303	976	436,177	446 90	1,349 31
Cars and car wheels, .....	8	284	2,841	1,363,150	479 81	4,218,607
Ship building, .....	1	307	516	285,103	552 52	686,723
Rubber boots and shoes, .....	1	244	359	131,577	338 66	812,523
Woolen yarns, .....	10	269	1,331	408,385	306 83	2,338,390
Cotton yarns, .....	3	276	220	63,476	288 52	405,093
Worsted yarns, .....	3	246	665	157,080	236 21	796,376
Miscellaneous yarns, .....	9	214	378	130,224	344 51	701,547
Hosiery, .....	13	288	2,708	632,065	233 41	2,131,116
Hosiery and knit goods, .....	3	289	453	165,220	232 27	459 551

## YEAR 1896—Continued.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Character of Industries.	Number of estab- lishments consid- ered.	Average number of days in opera- tion.	Total number of per- sons em- ployed.	Aggre- gate amount of wages paid.	Average yearly earnings.	Value of product.
Carpets, .....	24	263	5,362	\$1,830,621	\$341 41	\$7,626,053
Cotton and woolen goods, .....	12	220	1,182	338,900	286 72	1,296,709
Cotton goods, .....	17	258	3,894	1,064,130	273 27	6,157,585
Woolen goods, .....	16	274	3,933	1,193,111	304 88	5,231,275
Knit goods, .....	5	261	973	228,053	234 28	948,460
Worsted goods, .....	3	220	389	132,290	340 08	637,323
Mixed textiles, .....	9	282	1,894	559,443	297 37	2,307,722
Chenille goods, .....	5	201	1,378	501,772	364 13	1,711,069
Tapestry and table covers, .....	3	289	296	115,266	389 07	423,356
Silk broad goods, .....	4	274	1,850	470,930	254 56	2,871,300
Window glass, bottle and table goods, .....	17	229	4,868	1,903,683	391 06	3,969,520
Pianos and organs, .....	2	208	126	51,392	407 87	13,508
Carbons, .....	1	310	50	24,000	480 00	30,000
Totals, .....	354	276	118,092	\$52,102,665	\$441 20	\$211,252,732

## YEAR 1897.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Character of Industries.	Number of establishments considered.	Average number of days in operation.	Total number of persons employed.	Aggregate amount of wages paid.	Average yearly earnings.	Value of product.
Pig iron, .....	13	319	1,904	\$797,839	\$419 03	\$5,043,503
Rolling mills—general product,	32	311	35,579	17,159,786	482 30	93,540,222
Iron and steel sheets and plates, .....	14	271	5,205	2,569,347	493 63	9,668,034
Plate and bar, .....	3	285	1,360	626,250	460 50	3,162,028
Steel, .....	13	271	10,361	4,918,524	474 71	17,454,677
Architectural cast and wrought iron work, .....	4	304	1,086	597,775	550 44	1,847,959
Iron forging, .....	4	267	533	281,250	527 67	691,901
Nails and spikes, .....	10	243	1,714	503,927	346 52	2,897,207
Nuts and bolts, .....	2	304	576	200,064	347 33	558,788
Pipes and tubes, .....	4	278	1,357	642,407	473 40	2,701,883
Iron foundries and machine works, .....	25	298	3,002	1,513,104	504 03	4,055,120
Stoves, ranges, heaters, etc., ..	9	236	1,278	574,595	448 97	1,414,639
Hardware, .....	4	261	1,569	555,295	353 98	1,078,827
Malleable iron, .....	2	273	431	208,714	484 25	404,410
Saws, edge tools, etc., .....	5	274	2,126	988,912	465 15	2,527,680
Metal and metallic goods, .....	8	288	1,515	712,676	470 41	2,341,075
Locomotives and engines, .....	14	295	10,038	5,398,050	537 76	14,327,515
Engines and boilers, .....	6	297	1,205	552,180	458 24	1,778,989
Boilers, .....	7	248	652	236,863	363 29	887,529
Bridges, .....	4	305	630	75,270	436 94	1,181,470
Car springs, .....	1	244	125	69,144	553 15	428,271
Car couplers, .....	1	303	813	371,800	457 32	1,052,857
Cars and car wheels, .....	8	288	2,661	1,335,463	501 81	3,265,217
Window glass, bottle and table goods, .....	17	268	4,993	2,257,805	459 19	4,941,382
Ship building, .....	1	310	388	215,604	555 68	476,868
Pianos and organs, .....	2	298	125	52,502	420 02	145,713
Rubber boots and shoes, .....	1	222	375	103,639	276 37	619,765
Carbons, .....	1	310	50	24,000	480 00	75,000
Carpets, .....	24	291	5,496	1,983,366	360 88	8,670,971
Woolen yarns, .....	10	296	1,476	384,803	260 71	2,700,099
Cotton yarns, .....	3	297	255	78,009	305 92	483,900

## YEAR 1897—Continued.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Character of Industries.	Number of establishments considered.	Average number of days in operation.	Total number of persons employed.	Aggregate amount of wages paid.	Average yearly earnings.	Value of product.
Worsted yarns, .....	3	288	728	\$201,321	\$270 54	\$1,061,344
Miscellaneous yarns, .....	9	283	422	156,864	371 72	1,025,606
Woolen goods, .....	16	290	4,121	1,363,041	330 75	6,150,087
Cotton goods, .....	17	293	4,173	1,251,253	299 84	7,290,259
Cotton and woolen goods, .....	12	270	1,162	359,586	309 46	1,485,822
Worsted goods, .....	3	289	610	256,513	420 51	1,311,843
Knit goods, .....	5	271	1,010	247,615	245 16	1,077,426
Chenille goods, .....	5	301	1,542	575,861	373 04	1,800,173
Mixed textiles, .....	9	282	2,025	591,656	292 18	2,506,565
Tapestry and table covers, .....	3	291	393	161,275	410 37	500,716
Hosiery, .....	13	288	3,012	773,370	256 76	2,451,639
Hosiery and knit goods, .....	3	300	538	148,908	276 78	541,180
Silk broad goods, .....	4	303	2,667	632,685	237 23	3,979,336
Totals, .....	354	287	121,281	\$52,138,941	\$429 90	\$222,995,654



## YEAR 1898.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Character of Industries.	Number of es- tablish- ments consid- ered.	Average number of days in operation.	Total number of persons em- ployed.
Pig iron, .....	13	344	2,124
Rolling mills—general product, .....	32	321	40,175
Iron and steel sheets and plates, .....	14	290	6,524
Plate and bar, .....	3	300	2,372
Steel, .....	13	282	12,176
Architectural cast and wrought iron work, ..	4	306	1,435
Iron forging, .....	4	293	668
Nails and spikes, .....	10	205	2,099
Nuts and bolts, .....	2	306	758
Pipes and tubes, .....	4	284	1,612
Iron foundries and machine works, .....	25	300	3,417
Stoves, ranges, heaters, etc., .....	9	246	1,310
Hardware, .....	4	233	1,695
Malleable iron, .....	2	292	697
Saws, edge tools, etc., .....	5	299	2,549
Metal and metallic goods, .....	8	309	1,609
Locomotives and engines, .....	14	301	12,397
Engines and boilers, .....	6	303	1,269
Boilers, .....	7	277	810
Bridges, .....	4	304	757
Car springs, .....	1	286	140
Car couplers, .....	1	303	783
Cars and car wheels, .....	8	297	3,572
Ship building, .....	1	307	810
Rubber boots and shoes, .....	1	244	400
Woolen yarns, .....	10	274	1,513

## YEAR 1898.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Aggregate amount of wages paid.	Average yearly earnings.	Value of product.	Value of product during the year to each employe.	Average daily wage.
\$950,759	\$447 63	\$8,307,428	\$3,911 22	\$1 30
20,005,631	497 96	111,954,871	2,786 68	1 55
3,402,674	521 56	13,760,272	2,109 18	1 80
1,082,343	456 30	3,018,260	1,272 43	1 52
\$5,828,123	478 66	20,327,249	1,669 45	1 70
771,191	537 42	2,775,266	1,933 91	1 76
365,737	547 51	1,033,335	1,546 91	1 87
556,145	264 96	2,494,289	1,188 32	1 29
291,593	384 69	1,042,896	1,375 85	1 26
769,577	477 41	3,463,901	2,148 82	1 68
1,800,212	526 84	4,927,626	1,442 09	1 76
595,133	454 30	1,461,366	1,115 55	1 85
575,798	339 70	1,407,967	830 66	1 46
341,962	490 62	704,698	1,011 04	1 68
1,273,829	499 74	3,228,334	1,270 43	1 67
762,480	473 88	3,070,810	1,908 52	1 53
7,149,884	576 74	19,449,658	1,568 90	1 92
639,408	503 87	2,126,376	1,675 63	1 66
298,175	368 12	1,444,757	1,783 65	1 33
333,277	440 26	1,651,568	2,181 73	1 45
95,162	679 73	652,635	4,661 68	2 38
351,902	449 43	1,404,617	1,793 89	1 48
1,912,759	535 49	4,200,831	1,176 04	1 80
397,489	490 73	1,217,489	1,503 07	1 60
139,770	349 43	960,923	2,402 31	1 43
461,866	305 26	3,091,557	2,043 33	1 11

## YEAR 1898—Continued.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Character of Industries.	Number of es- tablish- ments consid- ered.	Average number of days in operation.	Total number of persons em- ployed.
Cotton yarns, .....	3	295	267
Worsted yarns, .....	3	256	713
Miscellaneous yarns, .....	9	263	393
Hosiery, .....	13	279	3,212
Hosiery and knit goods, .....	3	300	471
Carpets, .....	24	286	5,123
Cotton and woolen goods, .....	12	272	1,320
Cotton goods, .....	17	298	4,246
Woolen goods, .....	16	289	4,136
Knit goods, .....	5	253	980
Worsted goods, .....	3	273	583
Mixed textiles, .....	9	300	2,120
Chenille goods, .....	5	302	1,575
Tapestry and table covers, .....	3	291	462
Silk broad goods, .....	4	292	2,964
Window glass, bottle and table goods, .....	17	271	5,572
Pianos and organs, .....	2	296	127
Carbons, .....	1	310	50
Total and averages, .....	354	298	137,985

## YEAR 1898—Continued.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Aggregate amount of wages paid.	Average yearly earnings.	Value of product.	Value of pro- duct during the year to each employe.	Average daily wage.
\$82,051	\$307 31	\$447,456	\$1,675 80	\$1 04
175,310	245 88	853,230	1,196 68	0 96
133,248	339 05	802,170	2,041 14	1 29
807,402	251 37	2,592,249	807 05	90
134,120	284 76	521,697	1,107 64	95
1,824,963	356 23	8,147,236	1,590 33	1 25
416,500	315 53	1,584,830	1,200 63	1 16
1,373,237	323 42	7,459,927	1,756 93	1 09
1,384,116	334 65	6,266,213	1,515 04	1 16
247,184	252 23	1,045,926	1,067 27	1 00
244,146	418 78	1,311,890	2,250 24	1 53
632,258	298 23	2,777,338	1,310 06	99
561,012	356 20	1,990,273	1,263 67	1 18
180,225	390 10	589,330	1,275 60	1 34
724,004	244 27	4,554,525	1,536 61	84
2,525,933	453 33	5,690,250	1,021 22	1 67
54,027	425 41	151,011	1,189 06	1 44
24,000	480 00	70,000	1,400 00	1 55
<hr/> \$62,676,615	<hr/> \$454 52	<hr/> \$266,044,530	<hr/> \$1,929 33	<hr/> \$1 52

## YEAR 1899.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Character of Industries.	Number of es- tablish- ments consid- ered.	Average number of days in operation.	Total number of persons em- ployed.
Pig iron, .....	13	322	3,015
Rolling mills, general product, .....	32	324	43,533
Iron and steel sheets and plates, .....	14	294	8,327
Plate and bar, .....	3	302	2,709
Steel, .....	13	285	14,578
Architectural cast and wrought iron work, ..	4	305	1,755
Iron forgings, .....	4	295	670
Nails and spikes, .....	10	229	2,360
Nuts and bolts, .....	2	304	955
Pipes and tubes, .....	4	279	1,720
Iron foundries and machine works, .....	25	305	4,091
Stoves, ranges, heaters, etc., .....	9	247	1,304
Hardware, .....	4	268	1,926
Malleable iron, .....	2	292	740
Saws, edged tools, etc., .....	5	301	3,079
Metal and metallic goods, .....	8	324	1,809
Locomotives and engines, .....	14	306	14,795
Engines and boilers, .....	6	303	1,409
Boilers, .....	7	307	512
Bridges, .....	4	284	975
Car springs, .....	1	300	177
Car couplers, .....	1	303	905
Cars and car wheels, .....	8	304	3,184
Ship building, .....	1	302	915
Rubber boots and shoes, .....	1	243	500
Woolen yarns, .....	10	274	1,706



## YEAR 1899.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Aggregate amount of wages paid.	Average yearly earnings.	Value of product.	Value of product during the year to each employe.	Average daily wage.
\$1,502,193	\$498 24	\$14,277,497	\$4,735 49	\$1 55
26,368,594	605 72	169,222,486	3,887 22	1 87
4,781,188	574 18	22,050,830	2,648 11	1 95
1,391,372	513 21	5,472,624	2,020 16	1 70
7,540,393	517 24	29,873,149	2,049 20	1 81
971,114	553 34	3,143,891	1,791 39	1 81
373,752	557 84	1,806,887	2,696 85	1 89
800,175	339 06	3,363,000	1,552 12	1 48
520,681	545 22	1,686,712	1,766 19	1 80
831,654	483 52	4,625,429	2,689 20	1 73
2,198,285	537 35	6,795,327	1,661 04	1 76
635,413	487 28	1,798,904	1,379 53	1 97
753,877	391 42	2,019,722	1,048 66	1 46
389,287	521 83	887,905	1,190 22	1 79
1,583,828	514 40	4,559,222	1,480 75	1 71
896,108	495 36	4,101,137	2,267 07	1 53
8,797,896	594 65	25,412,790	1,717 66	1 94
728,062	516 72	2,792,857	1,982 15	1 71
237,840	464 53	1,273,424	2,487 16	1 51
408,803	419 29	2,748,096	2,818 56	1 48
129,115	729 46	1,045,408	5,906 26	2 43
449,000	496 13	1,668,325	1,843 45	1 64
1,763,251	553 78	5,329,637	1,673 88	1 82
483,200	528 09	1,507,546	1,647 59	1 75
175,876	351 75	1,082,260	2,164 52	1 45
524,527	307 46	4,042,767	2,369 73	1 12

## YEAR 1899—Continued.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Character of Industries.	Number of es- tablish- ments consid- ered.	Average number of days in operation.	Total number of persons em- ployed.
Cotton yarns, .....	3	306	264
Worsted yarns, .....	3	296	838
Miscellaneous yarns, .....	9	275	453
Hosiery, .....	13	280	3,204
Hosiery and knit goods, .....	3	300	456
Carpets, .....	24	299	6,178
Cotton and woolen goods, .....	12	274	1,262
Cotton goods, .....	17	299	4,296
Woolen goods, .....	16	287	4,350
Knit goods, .....	5	282	1,004
Worsted goods, .....	3	295	597
Mixed textiles, .....	9	300	2,431
Chenille goods, .....	5	292	1,614
Tapestry and table covers, .....	3	277	492
Silk broad goods, .....	4	301	3,191
Window glass, bottle and table goods, .....	17	264	5,979
Pianos and organs, .....	2	300	120
Carbons, .....	1	290	38
Totals, .....	354	301	154,422

## YEAR 1899—Continued.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Aggregate amount of wages paid.	Average yearly earnings.	Value of product.	Value of pro- duct during the year to each employe.	Average daily wage.
\$87,040	\$329 70	\$460,269	\$1,743 44	\$1 08
239,566	285 88	1,495,701	1,784 84	98
171,356	378 27	1,105,504	2,440 40	1 37
809,834	252 76	2,679,349	836 25	90
142,663	312 85	607,414	1,322 02	1 04
2,307,694	353 53	9,987,646	1,616 65	1 25
407,698	323 06	1,904,700	1,509 27	1 18
1,508,218	351 08	8,624,421	2,007 55	1 17
1,498,231	344 42	7,347,006	1,688 97	1 20
288,434	287 28	1,135,696	1,131 17	1 02
242,183	405 67	1,382,803	2,316 25	1 38
765,896	315 05	3,445,679	1,417 39	1 05
679,963	421 29	2,260,296	1,400 43	1 44
189,321	384 80	648,616	1,318 32	1 39
805,682	252 49	5,598,713	1,754 54	84
2,726,527	456 02	6,425,487	1,074 68	1 73
53,303	444 19	171,279	1,427 33	1 48
20,240	532 63	66,000	1,736 84	1 84
<hr/> \$78,179,333	<hr/> \$506 27	<hr/> \$377,934,411	<hr/> \$2,447 41	<hr/> \$1 68

## YEAR 1900.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Character of Industries.	Number of es- tablish- ments consid- ered.	Average number of days in operation.	Total number of persons em- ployed.
Pig iron, .....	13	316	3,057
Rolling mills, general product, .....	32	320	29,873
Iron and steel sheets and plates, .....	14	272	7,884
Plate and bar, .....	3	284	2,752
Steel, .....	13	281	8,138
Architectural cast and wrought iron work, ..	4	305	2,321
Iron forgings, .....	4	284	161
Nails and spikes, .....	10	208	2,647
Nuts and bolts, .....	2	295	1,268
Pipes and tubes, .....	4	283	2,052
Iron foundries and machine works, .....	25	303	4,113
Stoves, ranges, heaters, etc., .....	9	224	308
Hardware, .....	4	247	1,706
Malleable iron, .....	2	273	616
Saws, edged tools, etc., .....	5	309	3,168
Metal and metallic goods, .....	8	304	1,628
Locomotives and engines, .....	14	307	17,523
Engines and boilers, .....	6	302	1,592
Boilers, .....	7	308	618
Bridges, .....	4	297	1,492
Car springs, .....	1	305	174
Car couplers, .....	1	303	875
Cars and car wheels, .....	8	304	3,260
Ship building, .....	1	302	900
Rubber boots and shoes, .....	1	233	500
Woolen yarns, .....	10	299	2,128

## YEAR 1900.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Aggregate amount of wages paid.	Average yearly earnings.	Value of product.	Value of product during the year to each employe.	Average daily wage.
\$1,383,893	\$455 97	\$16,492,134	\$5,394 88	\$1 44
18,725,089	626 82	198,252,323	6,636 51	1 96
4,387,581	556 52	22,834,195	2,896 27	2 05
1,190,369	432 55	4,028,343	1,463 79	1 52
4,870,336	598 47	24,779,969	3,044 97	2 13
1,264,962	545 01	5,859,998	2,524 77	1 79
115,518	717 50	1,180,911	7,334 85	2 52
928,737	350 86	5,207,812	1,967 44	1 69
550,577	434 21	2,231,393	1,759 77	1 47
1,013,349	493 83	5,857,222	2,854 40	1 75
2,312,981	562 36	7,270,742	1,767 75	1 85
660,164	504 71	1,815,164	1,387 74	2 25
568,061	332 98	1,685,976	988 26	1 35
335,124	544 03	747,232	1,213 04	1 99
1,682,130	530 97	4,764,529	1,503 95	1 72
837,203	514 25	2,742,603	1,684 65	1 69
10,657,939	608 22	33,554,210	1,914 87	1 98
838,696	526 82	3,457,461	2,171 77	1 74
291,905	472 34	1,531,763	2,478 58	1 53
847,340	567 92	5,956,502	3,992 29	1 91
136,336	783 54	1,123,226	6,455 32	2 57
441,925	505 06	1,524,435	1,742 21	1 66
1,827,031	560 44	6,276,282	1,925 24	1 84
449,335	449 26	1,493,910	1,659 90	1 65
174,134	348 27	1,059,420	2,118 84	1 49
656,246	308 39	5,181,604	2,434 96	1 03



## YEAR 1900—Continued.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Character of Industries.	Number of es- tablish- ments consid- ered.	Average number of days in operation.	Total number of persons em- ployed.
Cotton yarns, ..	3	306	275
Worsted yarns, .....	3	295	796
Miscellaneous yarns, .....	9	268	374
Hosiery, .....	13	275	3,116
Hosiery and knit goods, .....	3	297	520
Carpets, .....	24	297	5,803
Cotton and woolen goods, .....	12	258	1,199
Cotton goods, .....	17	288	4,013
Woolen goods, .....	16	291	4,520
Knit goods, .....	5	285	1,268
Worsted goods, .....	3	258	450
Mixed textiles, .....	9	300	2,783
Chenille goods, .....	5	264	1,463
Tapestry and table covers, .....	3	252	470
Silk broad goods, .....	4	285	3,070
Window glass, bottle and table goods, .....	17	244	5,732
Pianos and organs, .....	2	304	171
Carbons, .....	1	284	37
Totals, .....	354	299	136,814

## YEAR 1900—Continued.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Aggregate amount of wages paid.	Average yearly earnings.	Value of product.	Value of pro- duct during the year to each employe.	Average daily wage.
\$93,589	\$340 32	\$571,569	\$2,078 43	\$1 11
235,574	295 95	1,508,244	1,894 78	1 00
150,158	401 79	1,012,111	2,706 18	1 50
839,341	269 36	2,615,498	839 38	98
151,853	292 02	583,170	1,121 48	98
2,232,351	384 69	9,652,462	1,663 36	1 30
388,539	324 05	1,751,815	1,461 06	1 26
1,367,545	340 78	7,378,078	1,838 54	1 18
1,640,171	362 87	7,198,316	1,592 55	1 25
316,613	249 69	1,326,416	1,046 07	88
186,074	413 50	1,098,506	2,441 12	1 60
857,228	308 02	3,683,594	1,323 61	1 03
588,939	402 55	1,926,687	1,316 94	1 52
196,420	417 92	666,255	1,417 56	1 66
734,974	239 41	5,028,800	1,644 56	84
2,470,306	430 97	5,583,805	974 15	1 77
72,290	422 75	215,387	1,259 57	1 39
18,559	501 60	60,167	1,626 13	1 77
<hr/> \$69,697,485	<hr/> \$509 43	<hr/> \$418,790,239	<hr/> \$3,061 02	<hr/> \$1 70

## YEAR 1901.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Character of Industries.	Number of es- tablish- ments consid- ered.	Average number of days in operation.	Total number of persons em- ployed.
Pig iron ,.....	13	337	2,459
Rolling mills, general product, .....	32	316	38,724
Iron and steel sheets and plates, .....	14	278	9,456
Plate and bar, .....	3	291	1,595
Steel, .....	13	296	17,480
Architectural cast and wrought iron work, ..	4	306	2,601
Iron forgings, .....	4	295	160
Nails and spikes, .....	10	266	1,607
Nuts and bolts, .....	2	286	1,021
Pipes and tubes, .....	4	303	2,364
Iron foundries and machine works, .....	25	303	4,477
Stoves, ranges, heaters, etc., .....	9	234	1,324
Hardware, .....	4	293	1,751
Malleable iron, .....	2	302	799
Saws, edged tools, etc., .....	5	301	3,360
Metal and metallic goods, .....	8	326	1,622
Locomotives and engines, .....	14	304	19,058
Engines and boilers, .....	6	301	1,701
Boilers, .....	7	308	708
Bridges, .....	4	309	1,459
Car springs, .....	1	303	178
Car couplers, .....	1	303	810
Cars and car wheels, .....	8	305	3,334
Ship building, .....	1	313	731
Rubber boots and shoes, .....	1	268	513
Woolen yarns, .....	10	296	1,959

## YEAR 1901.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Aggregate amount of wages paid.	Average yearly earnings.	Value of product.	Value of pro- duct during the year to each employe.	Average daily wage.
\$1,418,147	\$576 72	\$13,645,721	\$5,549 30	\$1 71
26,800,981	692 10	196,936,504	5,085 39	2 19
5,458,771	577 28	28,209,826	2,983 27	2 08
1,022,587	641 12	4,246,894	2,262 63	2 20
9,717,969	555 94	37,692,910	2,156 34	1 88
1,408,076	541 36	7,210,281	2,772 12	1 77
118,476	740 47	1,127,833	7,048 96	2 51
712,083	443 11	3,036,702	1,889 68	1 67
414,917	406 38	2,184,110	2,139 19	1 42
1,231,972	521 14	6,052,557	2,560 03	1 72
2,540,406	567 43	7,423,400	1,658 12	1 87
663,735	501 31	1,756,821	1,326 90	2 14
698,125	398 70	1,928,480	1,101 36	1 36
441,888	553 05	860,568	1,077 06	1 83
1,772,047	527 39	5,095,464	1,516 51	1 75
824,729	508 46	2,785,309	1,717 21	1 56
11,930,091	625 99	37,028,910	1,942 96	2 06
903,156	530 96	3,392,325	1,994 31	1 76
342,918	484 35	1,885,929	2,663 74	1 57
807,450	553 43	3,575,000	2,450 30	1 79
146,451	822 76	1,070,693	6,015 13	2 72
393,000	485 19	1,052,300	1,299 14	1 60
1,880,715	564 10	5,739,513	1,721 50	1 85
365,911	500 56	1,170,750	1,601 57	1 60
182,887	356 50	941,993	1,836 24	1 33
610,422	311 63	4,781,637	2,440 86	1 05

## YEAR 1901—Continued.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Character of Industries.	Number of es- tablish- ments consid- ered.	Average number of days in operation.	Total number of persons em- ployed.
Cotton yarns, .....	3	288	257
Worsted yarns, .....	3	297	849
Miscellaneous yarns, .....	9	289	381
Hosiery, .....	13	290	2,900
Hosiery and knit goods, .....	3	298	478
Carpets, .....	24	290	5,956
Cotton and woolen goods, .....	12	263	1,165
Cotton goods, .....	17	282	3,850
Woolen goods, .....	16	280	4,544
Knit goods, .....	5	257	1,064
Worsted goods, .....	3	253	410
Mixed textiles, .....	9	289	2,644
Chenille goods, .....	5	281	1,492
Tapestry and table covers, .....	3	277	310
Silk broad goods, .....	4	268	3,288
Window glass, bottles and table goods, .....	17	235	5,367
Pianos and organs, .....	2	299	17
Carbons, .....	1	294	3
Totals, .....	354	296	156,42



## YEAR 1901—Continued.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS.

Aggregate amount of wages paid.	Average yearly earnings.	Value of product.	Value of pro- duct during the year to each employee.	Average daily wage.
\$88,159	\$343 03	\$479,046	\$1,863 99	\$1 19
238,632	281 07	1,419,743	1,672 25	95
156,599	411 02	1,025,967	2,692 83	1 42
793,487	273 62	2,558,590	882 27	94
147,857	309 32	596,327	1,247 55	1 04
2,321,117	389 71	9,718,668	1,613 74	1 34
362,067	310 79	1,640,565	1,408 21	1 18
1,357,230	352 53	8,250,689	2,143 04	1 25
1,610,162	354 35	7,845,888	1,726 65	1 27
245,641	230 87	973,529	914 97	90
173,828	417 86	929,687	2,234 82	1 65
830,012	313 92	3,736,137	1,413 06	1 08
625,897	419 50	2,105,386	1,411 12	1 49
134,625	426 34	457,030	1,446 30	1 54
761,327	231 76	4,948,756	1,506 47	86
2,471,234	460 45	5,204,192	969 66	1 96
74,851	437 73	211,177	1,234 95	1 46
19,394	510 37	60,846	1,601 21	1 74
<hr/> \$85,219,969	<hr/> \$544 80	<hr/> \$432,994,653	<hr/> \$2,768 08	<hr/> \$1 84

## RESUME.

THE SAME ESTABLISHMENTS FOR THE YEARS 1892, 1893, 1894, 1895, 1896,  
1897, 1898, 1899, 1900 AND 1901.

Years.	Number of es- tablish- ments consid- ered.	Total number of persons em- ployed.	Aggregate amount of wages paid.	Average yearly earnings.	Value of product.
1892, .....	354	136,882	\$67,331,876	\$491 90	\$269,452,465
1893, .....	354	122,278	56,818,289	464 66	226,017,762
1894, .....	354	109,383	45,229,667	413 15	185,626,971
1895, .....	354	127,361	56,704,511	445 78	222,730,930
1896, .....	354	118,092	52,102,365	441 29	211,252,732
1897, .....	354	121,281	52,138,941	429 90	222,995,654
1898, .....	354	137,985	62,676,615	454 52	266,044,530
1899, .....	354	154,422	78,179,333	506 27	377,934,411
1900, .....	354	136,814	69,697,485	509 43	418,790,239
1901, .....	354	156,424	85,219,969	544 80	432,994,653

COMPARISON OF TOTALS, ALL ESTABLISHMENTS (354), FOR  
THE YEARS ENDING, 1892, 1893, 1894, 1895, 1896, 1897, 1898,  
1899, 1900 AND 1901.

Years.	Number of establishments considered.	Total persons and amounts.	Increase (+) or decrease (—) as compared with the preceding year.		Increase (+) or decrease (—) 1901 as compared with 1892.	
			Persons and amounts.	Percentage.	Persons and amounts.	Percentage.

PERSONS EMPLOYED.

1892, .....	354	136,882	.....	.....	.....	.....
1893, .....	354	122,278	—14,604	—10.67	.....	.....
1894, .....	354	109,383	—12,895	—10.55	.....	.....
1895, .....	354	127,361	+17,978	+16.44	.....	.....
1896, .....	354	118,092	—9,269	—7.28	.....	.....
1897, .....	354	121,281	+3,189	+2.70	.....	.....
1898, .....	354	137,985	+16,704	+13.69	.....	.....
1899, .....	354	154,422	+16,437	+11.99	.....	.....
1900, .....	354	136,814	—17,608	—11.40	.....	.....
1901, .....	354	156,424	+19,610	+14.33	+19,542	+14.27

AGGREGATE WAGES PAID.

1892, .....	354	\$67,331,876	.....	.....	.....	.....
1893, .....	354	56,818,289	—\$10,513,587	—15.61	.....	.....
1894, .....	354	45,229,667	—11,588,622	—20.40	.....	.....
1895, .....	354	56,704,511	+11,474,844	+25.37	.....	.....
1896, .....	354	52,102,365	—4,602,146	—8.12	.....	.....
1897, .....	354	52,138,941	+36,576	+0.07	.....	.....
1898, .....	354	62,676,615	+10,537,674	+20.21	.....	.....
1899, .....	354	78,179,333	+15,502,718	+24.73	.....	.....
1900, .....	354	69,697,485	—8,481,848	—10.85	.....	.....
1901, .....	354	85,219,969	+15,522,484	+22.27	+\$17,888,093	+26.56

AVERAGE YEARLY EARNINGS.

1892, .....	354	\$491 90	.....	.....	.....	.....
1893, .....	354	464 66	—\$27 24	—5.54	.....	.....
1894, .....	354	413 50	—51 16	—11.01	.....	.....
1895, .....	354	445 78	+32 28	+7.81	.....	.....
1896, .....	354	441 29	—4 49	—1.01	.....	.....
1897, .....	354	429 90	—11 39	—2.58	.....	.....
1898, .....	354	454 52	+24 62	+5.73	.....	.....
1899, .....	354	506 27	+51 75	+11.33	.....	.....
1900, .....	354	509 43	+3 16	+0.62	.....	.....
1901, .....	354	544 80	+35 37	+6.94	+\$52 90	+10.75

COMPARISON OF TOTALS, ALL ESTABLISHMENTS (354), FOR  
THE YEARS ENDING 1892, 1893, 1894, 1895, 1896, 1897, 1898,  
1899, 1900 AND 1901—Continued.

Years.	Number of estab- lishments considered.	Total per- sons and amounts.	Increase (+) or decrease (—) as compared with the preceding year.		Increase (+) or decrease (—) 1901 as compared with 1892.	
			Persons and amounts.	Percentage.	Persons and amounts.	Percentage.

VALUE OF PRODUCT.

1892, .....	354	\$269,452,465	.....	.....	.....	.....
1893, .....	354	226,017,762	—\$43,434,703	—16.12	.....	.....
1894, .....	354	185,626,971	—40,390,791	—17.87	.....	.....
1895, .....	354	222,730,930	+37,103,959	—19.99	.....	.....
1896, .....	354	211,252,722	—11,478,198	—5.15	.....	.....
1897, .....	354	222,995,654	+11,742,922	+5.56	.....	.....
1898, .....	354	266,044,530	+43,048,876	+19.30	.....	.....
1899, .....	354	377,934,411	+111,889,881	+42.06	.....	.....
1900, .....	354	418,790,239	+40,855,828	+10.81	.....	.....
1901, .....	354	432,994,653	+14,204,414	+3.39	+\$163,542,188	+69.69

## 1896 SERIES.

## CAPITAL INVESTED.

## COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

(NOTE...In this table the aggregate amount of capital invested by the same establishments for the years 1896, 1897, 1898, 1899, 1900 and 1901 is presented, with the relative increase or decrease, together with the increase or decrease 1901 over 1896. Eighty-eight industries, representing 801 establishments, are considered.)

Character of Industry and Years.	Number of establishments considered.	Capital.	Increase(+) or decrease(—) as compared with the preceding year.	Increase(+) or decrease(—) 1901 as compared with 1896.
STEEL CASTINGS.				
1896, .....	7	\$5,744,982	\$	\$
1897, .....	7	5,316,197	—428,785	.....
1898, .....	7	5,354,846	+38,649	.....
1899, .....	7	5,393,523	+38,677	.....
1900, .....	7	5,394,265	+742	.....
1901, .....	7	5,394,265	.....	—350,717
STEEL BILLETS, SLABS, BLOOMS, ETC.				
1896, .....	4	13,137,175	.....	.....
1897, .....	4	13,218,900	+81,725	.....
1898, .....	4	12,718,900	—500,000	.....
1899, .....	4	13,318,900	+600,000	.....
1900, .....	4	13,791,119	+472,219	.....
1901, .....	4	13,791,119	.....	+653,944
TOOL STEEL.				
1896, .....	3	480,000	.....	.....
1897, .....	3	608,000	+128,000	.....
1898, .....	3	690,000	+82,000	.....
1899, .....	3	690,000	.....	.....



## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Capital.	Increase(+) or decrease (-) as com- pared with the preced- ing year.	Increase (+) or de- crease(-) 1901 as compared with 1896.
TOOL STEEL—Continued.				
1900, .....	3	\$1,050,000	+\$360,000	\$
1901, .....	3	1,050,000	.....	+570,000
IRON AND STEEL FORGINGS.				
1896, .....	7	431,000	.....	.....
1897, .....	7	430,000	—1,000	.....
1898, .....	7	482,850	+52,850	.....
1899, .....	7	491,800	+8,950	.....
1900, .....	7	496,100	+4,300	.....
1901, .....	7	585,000	+88,900	+154,000
IRON SPECIALTIES.				
1896, .....	2	35,000	.....	.....
1897, .....	2	45,000	+10,000	.....
1898, .....	2	45,000	.....	.....
1899, .....	2	45,000	.....	.....
1900, .....	2	45,500	+500	.....
1901, .....	2	55,500	+10,000	+20,500
MALLEABLE IRON.				
1896, .....	4	440,000	.....	.....
1897, .....	4	493,925	+53,925	.....
1898, .....	4	532,600	+38,675	.....
1899, .....	4	1,527,533	+994,933	.....
1900, .....	4	1,524,280	—3,253	.....
1901, .....	4	1,594,090	+69,810	+1,154,090

## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Capital.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease(—) 1901 as compared with 1896.
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## BOLTS, NUTS, ETC.

1896, .....	8	\$1,885,950	\$	\$
1897, .....	8	1,918,214	+32,264	.....
1898, .....	8	1,957,776	+39,562	.....
1899, .....	8	2,192,934	+235,158	.....
1900, .....	8	2,359,574	+166,640	.....
1901, .....	8	2,377,009	+17,435	+491,059

## WIRE NAILS, RIVETS, ETC.

1896, .....	4	1,005,000	.....	.....
1897, .....	4	1,015,000	+10,000	.....
1898, .....	4	1,012,950	—2,050	.....
1899, .....	4	1,045,000	+32,050	.....
1900, .....	4	1,025,000	—20,000	.....
1901, .....	4	535,000	—490,000	—470,000

## TACKS AND SMALL NAILS.

1896, .....	4	163,500	.....	.....
1897, .....	4	163,500	.....	.....
1898, .....	4	123,500	—40,000	.....
1899, .....	4	163,500	+40,000	.....
1900, .....	4	163,500	.....	.....
1901, .....	4	158,500	—5,000	—5,000

## WIRE.

1896, .....	5	480,000	.....	.....
1897, .....	5	482,100	+2,100	.....
1898, .....	5	495,600	+13,500	.....

## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Capital.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
WIRE—Continued.				
1899, .....	5	\$605,900	+\$110,300	\$
1900, .....	5	611,900	+6,000	.....
1901, .....	5	618,100	+6,200	+138,100
WIRE ROPE.				
1896, .....	2	690,000	.....	.....
1897, .....	2	700,000	+10,000	.....
1898, .....	2	700,000	.....	.....
1899, .....	2	700,000	.....	.....
1900, .....	2	1,100,000	+400,000	.....
1901, .....	2	1,400,000	+300,000	+710,000
WIRE GOODS.				
1896, .....	5	150,950	.....	.....
1897, .....	5	154,450	+3,500	.....
1898, .....	5	155,050	+600	.....
1899, .....	5	170,550	+15,500	.....
1900, .....	5	167,916	—2,634	.....
1901, .....	5	169,989	+2,073	+19,039
WAGON AND CARRIAGE AXLES AND SPRINGS.				
1896, .....	6	594,475	.....	.....
1897, .....	6	594,475	.....	.....
1898, .....	6	604,475	+10,000	.....
1899, .....	6	614,000	+9,525	.....
1900, .....	6	606,454	+7,546	.....
1901, .....	6	618,462	+12,008	+23,987

## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Capital.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## SCALES, ETC.

1896, .....	4	\$166,000	\$	\$
1897, .....	4	171,000	+5,000	.....
1898, .....	4	176,000	+5,000	.....
1899, .....	4	206,000	+30,000	.....
1900, .....	4	216,000	+10,000	.....
1901, .....	4	217,600	+1,600	+51,600

STOVES, RANGES, HEATERS,  
ETC.

1896, .....	37	5,457,362	.....	.....
1897, .....	37	5,520,359	+62,997	.....
1898, .....	37	5,592,761	+72,402	.....
1899, .....	37	5,528,895	—63,866	.....
1900, .....	37	7,360,316	+1,831,421	.....
1901, .....	37	7,348,895	—11,421	+1,891,533

## BATH BOILERS, TANKS, ETC.

1896, .....	2	52,820	.....	.....
1897, .....	2	54,000	+1,180	.....
1898, .....	2	54,000	.....	.....
1899, .....	2	59,000	+5,000	.....
1900, .....	2	59,000	.....	.....
1901, .....	2	59,000	.....	+6,180

## HARDWARE SPECIALTIES.

1896, .....	14	3,077,418	.....	.....
1897, .....	14	3,246,189	+168,771	.....
1898, .....	14	3,337,946	+91,757	.....
1899, .....	14	3,559,734	+221,788	.....

## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Capital.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
HARDWARE SPECIALTIES— Continued.				
1900, .....	14	\$4,045,685	+\$485,951	\$
1901, .....	14	3,971,920	—73,765	+894,502
EDGE TOOLS.				
1896, .....	12	1,675,197	.....	.....
1897, .....	12	1,613,064	—62,133	.....
1898, .....	12	1,646,820	+33,756	.....
1899, .....	12	1,233,793	—413,027	.....
1900, .....	12	1,689,815	+456,022	.....
1901, .....	12	1,725,640	+35,825	+50,443
WRENCHES, PICKS, ETC.				
1896, .....	5	564,000	.....	.....
1897, .....	5	571,000	+7,000	.....
1898, .....	5	571,000	.....	.....
1899, .....	5	571,000	.....	.....
1900, .....	5	575,000	+4,000	.....
1901, .....	5	575,000	.....	+11,000
LOCOMOTIVES AND CARS BUILT AND REPAIRED.				
1896, .....	3	1,464,400	.....	.....
1897, .....	3	1,464,400	.....	.....
1898, .....	3	1,442,800	—21,600	.....
1899, .....	3	1,461,400	+18,600	.....
1900, .....	3	1,461,400	.....	.....
1901, .....	3	1,520,800	+59,400	+56,400



## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Capital.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
WROUGHT IRON PIPE AND TUBES.				
1896, .....	5	\$13,555,000	\$	\$
1897, .....	5	13,505,000	—50,000	.....
1898, .....	5	13,505,000	.....	.....
1899, .....	5	14,101,131	+596,131	.....
1900, .....	5	14,101,131	.....	.....
1901, .....	5	14,101 131	.....	+546,131
CAST IRON PIPE.				
1896, .....	3	340,000	.....	.....
1897, .....	3	613,059	+273,059	.....
1898, .....	3	641,710	+28,651	.....
1899, .....	3	896,776	+255,066	.....
1900, .....	3	896,776	.....	.....
1901, .....	3	916,776	+20,000	+576,776
BRASS, COPPER AND BRONZE GOODS.				
1896, .....	19	1,853,192	.....	.....
1897, .....	19	1,845,192	—8,000	.....
1898, .....	19	1,853,450	+8,258	.....
1899, .....	19	1,877,750	+24,300	.....
1900, .....	19	2,010,167	+132,417	.....
1901, .....	19	2,161,666	+151,499	+308,474
IRON AND STEEL BRIDGES.				
1896, .....	7	961,050	.....	.....
1897, .....	7	961,050	.....	.....

## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Capital.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
IRON AND STEEL BRIDGES— Continued.				
1898, .....	7	\$961,050	\$	\$
1899, .....	7	1,001,050	+40,000	.....
1900, .....	7	1,901,050	+900,000	.....
1901, .....	7	1,951,050	+50,000	+990,000
LOCOMOTIVES, STATIONERY ENGINES, ETC.				
1896, .....	9	11,222,730	.....	.....
1897, .....	9	11,643,157	+420,427	.....
1898, .....	9	12,118,787	+475,630	.....
1899, .....	9	12,956,218	+837,431	.....
1900, .....	9	13,417,380	+461,162	.....
1901, .....	9	15,440,434	+2,023,054	+4,217,704
ENGINES, BOILERS, ETC.				
1896, .....	10	3,908,988	.....	.....
1897, .....	10	3,924,988	+16,000	.....
1898, .....	10	3,930,783	+5,795	.....
1899, .....	10	4,036,999	+106,216	.....
1900, .....	10	4,114,000	+77,001	.....
1901, .....	10	4,337,000	+223,000	+428,012
CARS, SPRINGS, AXLES AND RAILWAY SUPPLIES.				
1896, .....	12	6,310,325	.....	.....
1897, .....	12	5,840,116	—470,209	.....
1898, .....	12	5,872,258	+32,142	.....
1899, .....	12	27,585,264	+21,713,006	.....

## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Capital.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
<b>CARS, SPRINGS, AXLES AND RAILWAY SUPPLIES — Continued.</b>				
1900, .....	12	\$27,971,682	+\$386,418	\$
1901, .....	12	23,482,047	—4,489,635	+17,171,722
<b>IRON VESSELS AND ENGINES.</b>				
1896, .....	3	7,039,973	.....	.....
1897, .....	3	7,274,993	+235,020	.....
1898, .....	3	7,262,278	—12,715	.....
1899, .....	3	7,866,622	+604,344	.....
1900, .....	3	10,973,657	+3,107,035	.....
1901, .....	3	12,247,131	+1,273,474	+5,207,158
<b>BOILERS, TANKS, STACKS, ETC.</b>				
1896, .....	21	1,544,562	.....	.....
1897, .....	21	1,624,265	+79,703	.....
1898, .....	21	1,656,210	+31,945	.....
1899, .....	21	1,857,238	+201,028	.....
1900, .....	21	2,022,964	+165,726	.....
1901, .....	21	2,640,108	+617,144	+1,095,546
<b>MACHINERY</b>				
1896, .....	21	8,798,408	.....	.....
1897, .....	21	8,921,924	+123,516	.....
1898, .....	21	9,297,253	+375,329	.....
1899, .....	21	9,650,673	+353,420	.....
1900, .....	21	10,418,419	+767,746	.....
1901, .....	21	11,451,866	+1,033,447	+2,653,458

## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Capital.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
FOUNDRIES AND MACHINE SHOPS.				
1896, .....	25	\$3,041,550	\$	\$
1897, .....	25	3,062,486	+20,936	.....
1898, .....	25	3,161,069	+98,583	.....
1899, .....	25	3,621,293	+460,224	.....
1900, .....	25	3,939,754	+318,461	.....
1901, .....	25	4,236,490	+296,736	+1,194,940
FILES, ETC.				
1896, .....	2	510,000	.....	.....
1897, .....	2	510,000	.....	.....
1898, .....	2	512,000	+2,000	.....
1899, .....	2	512,000	.....	.....
1900, .....	2	512,000	.....	.....
1901, .....	2	515,000	+3,000	+5,000
SAWS.				
1896, .....	3	310,000	.....	.....
1897, .....	3	335,000	+25,000	.....
1898, .....	3	335,000	.....	.....
1899, .....	3	335,000	.....	.....
1900, .....	3	334,000	—1,000	.....
1901, .....	3	334,000	.....	+24,000
PLUMBER SUPPLIES.				
1896, .....	3	2,105,078	.....	.....
1897, .....	3	2,105,078	.....	.....
1898, .....	3	2,031,622	—12,129	.....

## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Capital.	Increase(+) or decrease (—) as compared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
PLUMBER SUPPLIES—Continued.				
1899, .....	3	\$2,080,669	+\$49,047	\$
1900, .....	3	2,266,837	+186,168	.....
1901, .....	3	2,274,610	+7,773	+169,532
ELECTRICAL SUPPLIES.				
1896, .....	4	12,815,696	.....	.....
1897, .....	4	12,848,743	+33,047	.....
1898, .....	4	13,893,503	+1,044,760	.....
1899, .....	4	14,018,383	+124,880	.....
1900, .....	4	15,032,833	+1,014,450	.....
1901, .....	4	18,488,343	+3,455,510	+5,672,647
SHOVELS, SPADES, SCOOPS, ETC.				
1896, .....	8	651,100	.....	.....
1897, .....	8	651,100	.....	.....
1898, .....	8	648,100	—3,000	.....
1899, .....	8	648,100	.....	.....
1900, .....	8	741,100	+93,000	.....
1901, .....	8	766,100	+25,000	+115,000
SAFES AND VAULT DOORS.				
1896, .....	2	80,000	.....	.....
1897, .....	2	68,000	—12,000	.....
1898, .....	2	68,000	.....	.....
1899, .....	2	68,000	.....	.....
1900, .....	2	173,397	+105,397	.....
1901, .....	2	178,262	+4,865	+98,262



## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Capital.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
METAL AND METALLIC GOODS.				
1896, .....	3	\$280,400	\$	\$
1897, .....	3	280,400	.....	.....
1898, .....	3	390,000	+109,600	.....
1899, .....	3	390,000	.....	.....
1900, .....	3	390,000	.....	.....
1901, .....	3	390,000	.....	+109,600
BUILDING AND STRUCTURAL IRON WORKS.				
1896, .....	2	823,000	.....	.....
1897, .....	2	823,000	.....	.....
1898, .....	2	823,000	.....	.....
1899, .....	2	823,000	.....	.....
1900, .....	2	823,000	.....	.....
1901, .....	2	833,950	+10,950	+10,950
IRON CHAINS.				
1896, .....	5	253,542	.....	.....
1897, .....	5	258,542	+5,000	.....
1898, .....	5	264,542	+6,000	.....
1899, .....	5	264,542	.....	.....
1900, .....	5	334,798	+70,256	.....
1901, .....	5	351,174	+16,376	+97,632
IRON FENCES AND RAILINGS.				
1896, .....	7	40,500	.....	.....
1897, .....	7	42,500	+2,000	.....
1898, .....	7	46,000	+3,500	.....

## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Capital.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
IRON FENCES AND RAILINGS —Continued.				
1899, .....	7	\$49,300	+\$3,300	\$
1900, .....	7	56,500	+7,200	.....
1901, .....	7	113,628	+57,128	+72,128
AGRICULTURAL IMPLEMENTS.				
1896, .....	12	1,905,000	.....	.....
1897, .....	12	1,907,000	+2,000	.....
1898, .....	12	1,943,000	+36,000	.....
1899, .....	12	1,703,000	—240,000	.....
1900, .....	12	2,035,000	+332,000	.....
1901, .....	12	2,189,000	+154,000	+284,000
STEAM PUMPS.				
1896, .....	2	280,000	.....	.....
1897, .....	2	376,974	+96,974	.....
1898, .....	2	380,871	+3,897	.....
1899, .....	2	433,343	+52,472	.....
1900, .....	2	479,015	+45,672	.....
1901, .....	2	503,522	+24,507	+223,522
BICYCLES.				
1896, .....	3	200,000	.....	.....
1897, .....	3	253,000	+53,000	.....
1898, .....	3	255,000	+20,000	.....
1899, .....	3	255,000	.....	.....
1900, .....	3	255,000	.....	.....
1901, .....	3	240,000	—15,000	+40,000

## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Capital.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
PIANOS AND ORGANS.				
1896, .....	2	\$51,000	\$	\$
1897, .....	2	51,000	.....	.....
1898, .....	2	117,000	+66,000	.....
1899, .....	2	141,000	+24,000	.....
1900, .....	2	246,000	+105,000	.....
1901, .....	2	358,081	+112,081	+307,081
TINWARE.				
1896, .....	5	372,700	.....	.....
1897, .....	5	374,000	+1,300	.....
1898, .....	5	374,000	.....	.....
1899, .....	5	414,000	+40,000	.....
1900, .....	5	434,000	+20,000	.....
1901, .....	5	578,000	+144,000	+205,300
PAPER MANUFACTORIES.				
1896, .....	8	4,257,961	.....	.....
1897, .....	8	4,425,013	+167,052	.....
1898, .....	8	4,771,595	+346,582	.....
1899, .....	8	5,082,399	+310,804	.....
1900, .....	8	5,666,232	+583,833	.....
1901, .....	8	5,799,229	+132,997	+1,541,268
WALL PAPER.				
1896, .....	4	310,000	.....	.....
1897, .....	4	395,000	+85,000	.....
1898, .....	4	410,500	+15,500	.....
1899, .....	4	440,000	+29,500	.....

## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Capital.	Increase(+) or decrease(—) as compared with the preceding year.	Increase(+) or decrease(—) 1901 as compared with 1896.
WALL PAPER—Continued.				
1900, .....	4	\$800,000	+\$360,000	\$
1901, .....	4	800,000	.....	+490,000
CIGARS.				
1896, .....	46	2,805,477	.....	.....
1897, .....	46	3,025,250	+219,773	.....
1898, .....	46	3,044,190	+18,940	.....
1899, .....	46	3,347,204	+303,014	.....
1900, .....	46	3,669,420	+322,216	.....
1901, .....	46	4,071,578	+402,158	+1,266,101
- BOOK BINDING.				
1896, .....	3	125,000	.....	.....
1897, .....	3	126,500	+1,500	.....
1898, .....	3	130,000	+3,500	.....
1899, .....	3	131,800	+1,800	.....
1900, .....	3	136,250	+4,450	.....
1901, .....	3	140,000	+3,750	+15,000
CORDAGE ROPE AND TWINE.				
1896, .....	5	3,260,000	.....	.....
1897, .....	5	3,260,000	.....	.....
1898, .....	5	3,260,000	.....	.....
1899, .....	5	3,435,000	+175,000	.....
1900, .....	5	3,410,000	—25,000	.....
1901, .....	5	3,510,000	+100,000	+250,000

## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Capital.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
PAPER, PAPER BOXES, ENVELOPES, ETC.				
1896, .....	27	\$1,491,067	\$	\$
1897, .....	27	1,504,284	+13,217	.....
1898, .....	27	1,489,559	—14,725	.....
1899, .....	27	1,873,115	+383,556	.....
1900, .....	27	1,933,681	+60,566	.....
1901, .....	27	1,512,207	—421,474	+21,140
POTTERY.				
1896, .....	2	510,000	.....	.....
1897, .....	2	560,000	+50,000	.....
1898, .....	2	560,000	.....	.....
1899, .....	2	510,000	—50,000	.....
1900, .....	2	505,000	—5,000	.....
1901, .....	2	505,000	.....	—5,000
PAVING BRICK.				
1896, .....	7	481,200	.....	.....
1897, .....	7	521,500	+40,300	.....
1898, .....	7	549,644	+28,144	.....
1899, .....	7	614,478	+64,834	.....
1900, .....	7	642,074	+27,596	.....
1901, .....	7	638,707	—3,367	+157,507
BUILDING BRICK.				
1896, .....	35	3,630,700	.....	.....
1897, .....	35	3,661,347	+30,647	.....
1898, .....	35	3,714,386	+53,039	.....



## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Capital.	Increase (+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease (—) 1901 as compared with 1896.
BUILDING BRICK—Continued.				
1899, .....	35	\$3,838,184	+\$123,798	\$
1900, .....	35	3,845,898	+7,714	.....
1901, .....	35	3,652,539	—193,359	+21,839
FIRE BRICK.				
1896, .....	18	2,240,600	.....	.....
1897, .....	18	2,421,783	+181,183	.....
1898, .....	18	2,556,283	+134,500	.....
1899, .....	18	2,746,876	+190,593	.....
1900, .....	18	2,746,876	+188,356	.....
1901, .....	18	2,998,426	+63,194	+757,826
SLATE ROOFING, ETC., TON- NAGE.				
1896, .....	6	1,021,451	.....	.....
1897, .....	6	1,041,800	+20,349	.....
1898, .....	6	1,022,007	—19,793	.....
1899, .....	6	831,112	—190,895	.....
1900, .....	6	974,100	+142,988	.....
1901, .....	6	1,043,453	+69,353	+22,002
SLATE ROOFING, ETC., SQUARES.				
1896, .....	14	511,916	.....	.....
1897, .....	14	513,914	+1,998	.....
1898, .....	14	704,913	+190,999	.....
1899, .....	14	534,914	—169,999	.....
1900, .....	14	630,914	+96,000	.....
1901, .....	14	553,814	—77,100	+41,898

## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Capital.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
WINDOW GLASS, BOTTLES AND TABLE GOODS.				
1896, .....	22	\$13,439,300	\$	\$
1897, .....	22	13,454,382	+15,082	.....
1898, .....	22	13,607,329	+152,947	.....
1899, .....	22	13,677,194	+69,865	.....
1900, .....	22	14,972,077	+1,294,883	.....
1901, .....	22	13,706,456	—1,265,621	+267,156
GLAZED AND CHROME KID.				
1896, .....	7	3,857,983	.....	.....
1897, .....	7	4,068,915	+210,932	.....
1898, .....	7	4,163,993	+95,078	.....
1899, .....	7	4,609,490	+445,497	.....
1900, .....	7	4,861,913	+252,423	.....
1901, .....	7	5,931,303	+1,069,390	+2,073,320
MEN'S, WOMEN'S, MISSES' AND CHILDREN'S SHOES.				
1896, .....	15	2,193,113	.....	.....
1897, .....	15	2,254,701	+61,588	.....
1898, .....	15	2,350,481	+95,780	.....
1899, .....	15	2,446,081	+95,600	.....
1900, .....	15	2,440,783	—5,298	.....
1901, .....	15	2,490,918	+50,135	+297,805
SUSPENDERS.				
1896, .....	2	82,000	.....	.....
1897, .....	2	92,000	+10,000	.....

## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Capital.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## SUSPENDERS—Continued.

1898, .....	2	\$95,000	+\$3,000	\$
1899, .....	2	120,000	+25,000	.....
1900, .....	2	150,000	+30,000	.....
1901, .....	2	170,500	+20,500	+88,500

## HATS AND CAPS.

1896, .....	3	273,592	.....	.....
1897, .....	3	307,789	+34,197	.....
1898, .....	3	296,776	—11,013	.....
1899, .....	3	307,676	+10,900	.....
1900, .....	3	360,735	+53,059	.....
1901, .....	3	375,548	+14,813	+101,956

## FUR AND FELT HATS.

1896, .....	4	2,773,726	.....	.....
1897, .....	4	2,782,743	+9,017	.....
1898, .....	4	2,775,406	—7,337	.....
1899, .....	4	2,775,439	+33	.....
1900, .....	4	3,077,842	+302,403	.....
1901, .....	4	3,074,328	—3,514	+300,602

## WOOL HATS.

1896, .....	7	338,997	.....	.....
1897, .....	7	424,035	+85,038	.....
1898, .....	7	458,635	+34,600	.....
1899, .....	7	414,493	—44,142	.....
1900, .....	7	462,722	+48,229	.....
1901, .....	7	489,264	+26,542	+150,267

## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Capital.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
UMBRELLAS AND PARASOLS.				
1896, .....	4	\$407,435	\$	\$
1897, .....	4	404,000	—3,435	.....
1898, .....	4	327,000	—77,000	.....
1899, .....	4	353,000	+16,000	.....
1900, .....	4	353,000	.....	.....
1901, .....	4	350,819	—2,181	—56,616
DRESS TRIMMINGS, BRAIDS, ETC.				
1896, .....	8	1,158,296	.....	.....
1897, .....	8	1,176,796	+18,500	.....
1898, .....	8	1,223,296	+52,500	.....
1899, .....	8	1,319,688	+90,392	.....
1900, .....	8	1,411,475	+91,787	.....
1901, .....	8	1,529,063	+117,588	+370,767
SHIRTS AND SHIRT WAISTS.				
1896, .....	9	905,500	.....	.....
1897, .....	9	907,500	+2,000	.....
1898, .....	9	933,200	+25,700	.....
1899, .....	9	979,900	+46,700	.....
1900, .....	9	979,700	—200	.....
1901, .....	9	967,900	—11,800	+62,400
NECKWEAR.				
1896, .....	3	135,000	.....	.....
1897, .....	3	135,000	.....	.....
1898, .....	3	135,000	.....	.....

## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Capital.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
NECKWEAR—Continued.				
1899, .....	3	\$135,000	\$	\$
1900, .....	3	135,000	.....	.....
1901, .....	3	135,850	+850	+850
COTTON AND WOOLEN CLOTHS.				
1896, .....	24	3,313,847	.....	.....
1897, .....	24	3,478,946	+165,099	.....
1898, .....	24	3,477,346	—1,600	.....
1899, .....	24	3,550,167	+72,821	.....
1900, .....	24	4,032,930	+482,763	.....
1901, .....	24	4,198,393	+165,463	+884,546
CARPETS.				
1896, .....	17	3,150,625	.....	.....
1897, .....	17	3,240,181	+89,556	.....
1898, .....	17	3,339,213	+99,032	.....
1899, .....	17	3,653,864	+314,651	.....
1900, .....	17	3,624,415	—29,449	.....
1901, .....	17	3,628,328	+3,913	+477,703
COTTON GOODS.				
1896, .....	16	2,767,649	.....	.....
1897, .....	16	2,825,764	+58,115	.....
1898, .....	16	2,893,271	+67,507	.....
1899, .....	16	3,309,205	+415,934	.....
1900, .....	16	3,313,177	+3,972	.....
1901, .....	16	3,363,442	+50,265	+595,793



## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Capital.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
WOOLEN AND WORSTED CASSI- MERES.				
1896, .....	11	\$1,297,633	\$	\$
1897, .....	11	1,339,549	+41,916	.....
1898, .....	11	1,301,000	—38,549	.....
1899, .....	11	1,382,000	+81,000	.....
1900, .....	11	1,382,000	.....	.....
1901, .....	11	1,382,000	.....	+84,367
WOOLEN AND WORSTED FA- BRICS.				
1896, .....	16	2,696,836	.....	.....
1897, .....	16	3,156,227	+186,391	.....
1898, .....	16	3,305,892	+149,665	.....
1899, .....	16	3,489,180	+183,288	.....
1900, .....	16	3,516,532	+27,352	.....
1901, .....	16	3,711,989	+195,457	+742,153
WOOLEN AND WORSTED YARNS.				
1896, .....	12	2,669,270	.....	.....
1897, .....	12	1,719,270	—950,000	.....
1898, .....	12	2,216,000	+496,730	.....
1899, .....	12	2,686,000	+470,000	.....
1900, .....	12	2,738,000	+52,000	.....
1901, .....	12	2,749,500	+11,500	+80,230
RUGS, YARNS, ETC.				
1896, .....	5	5,360,733	.....	.....
1897, .....	5	4,943,779	—416,954	.....

## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Capital.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
RUGS, YARNS, ETC.—Continued.				
1898, .....	\$	\$5,056,824	+\$113,045	\$
1899, .....	5	5,393,446	+336,622	.....
1900, .....	5	5,406,791	+13,345	.....
1901, .....	5	5,161,001	—245,790	—199,732
CARPET YARNS.				
1896, .....	11	953,500	.....	.....
1897, .....	11	967,575	+14,075	.....
1898, .....	11	968,000	+425	.....
1899, .....	11	1,062,532	+94,532	.....
1900, .....	11	1,041,068	—21,464	.....
1901, .....	11	1,074,009	+32,941	+120,509
COTTON YARNS.				
1896, .....	7	1,240,209	.....	.....
1897, .....	7	1,239,175	—1,034	.....
1898, .....	7	1,245,037	+5,862	.....
1899, .....	7	1,296,148	+51,111	.....
1900, .....	7	1,311,543	+15,395	.....
1901, .....	7	1,426,207	+114,664	+185,998
WORSTED, COTTON AND WOOLEN YARNS.				
1896, .....	10	2,205,274	.....	.....
1897, .....	10	2,300,289	+95,015	.....
1898, .....	10	2,314,603	+14,314	.....
1899, .....	10	2,642,458	+327,855	.....
1900, .....	10	2,720,252	+77,794	.....
1901, .....	10	2,839,511	+119,259	+634,237

## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Capital.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
WOOLEN BLANKETS, FLANNELS, ETC.				
1896, .....	5	\$669,730	\$	\$
1897, .....	5	687,000	+17,270	.....
1898, .....	5	696,500	+9,500	.....
1899, .....	5	794,122	+97,622	.....
1900, .....	5	853,909	+59,787	.....
1901, .....	5	851,526	—2,383	+181,796
LACE GOODS.				
1896, .....	3	741,000	.....	.....
1897, .....	3	741,300	+300	.....
1898, .....	3	795,000	+53,700	.....
1899, .....	3	860,850	+65,850	.....
1900, .....	3	886,044	+25,194	.....
1901, .....	3	913,154	+27,110	+172,154
CHENILLE GOODS.				
1896, .....	3	470,000	.....	.....
1897, .....	3	470,000	.....	.....
1898, .....	3	470,000	.....	.....
1899, .....	3	465,000	—5,000	.....
1900, .....	3	515,000	+50,000	.....
1901, .....	3	640,000	+125,000	+170,000
UPHOLSTERY GOODS.				
1896, .....	10	1,857,322	.....	.....
1897, .....	10	1,875,721	+18,399	.....
1898, .....	10	1,856,148	—19,573	.....

## CAPITAL INVESTED—Continued.

COMPARISON OF AGGREGATE CAPITAL INVESTED—SAME ESTABLISHMENTS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Capital.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
UPHOLSTERY GOODS—Continued.				
1899, .....	10	\$1,985,679	+\$129,531	\$
1900, .....	10	2,112,546	+126,867	.....
1901, .....	10	2,141,085	+28,539	+283,763
KNIT GOODS, UNDERWEAR.				
1896, .....	13	1,750,000	.....	.....
1897, .....	13	1,798,000	+48,000	.....
1898, .....	13	1,833,600	+35,600	.....
1899, .....	13	1,987,729	+154,129	.....
1900, .....	13	2,096,610	+108,881	.....
1901, .....	13	2,161,429	+64,819	+411,429
HOSIERY.				
1896, .....	31	1,997,318	.....	.....
1897, .....	31	2,154,951	+157,633	.....
1898, .....	31	2,347,041	+192,090	.....
1899, .....	31	2,894,145	+547,104	.....
1900, .....	31	3,117,842	+223,697	.....
1901, .....	31	3,303,176	+185,334	+1,305,858
SILK—BROAD GOODS, THROWN SILK, YARNS, ETC.				
1896, .....	6	1,574,700	.....	.....
1897, .....	6	1,624,700	+50,000	.....
1898, .....	6	1,977,500	+352,800	.....
1899, .....	6	2,102,500	+125,000	.....
1900, .....	6	2,102,500	.....	.....
1901, .....	6	2,097,500	—5,000	+522,800

## CAPITAL INVESTED—Continued.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Capital.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
SILK—BROAD GOODS AND RIB- BONS.				
1896, .....	2	\$1,650,000	\$	\$
1897, .....	2	1,650,000	.....	.....
1898, .....	2	1,660,000	+10,000	.....
1899, .....	2	1,670,000	+10,000	.....
1900, .....	2	1,700,000	+30,000	.....
1901, .....	2	1,700,000	.....	+50,000
SILK—RIBBONS.				
1896, .....	4	311,882	.....	.....
1897, .....	4	394,180	+82,298	.....
1898, .....	4	445,313	+51,133	.....
1899, .....	4	463,316	+18,003	.....
1900, .....	4	504,168	+40,852	.....
1901, .....	4	556,521	+52,353	+244,639



## BASIC MATERIAL.

## COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

NOTE.—In this table the aggregate cost of basic material by the same establishments for the years 1896, 1897, 1898, 1899, 1900 and 1901 is presented, with the relative increase or decrease, together with the increase or decrease 1901 over 1896. Eighty-eight industries, representing 801 establishments, are considered. In basic material is not included fuel or other item than that crude material out of which the product is produced.

Character of Industry and Years.	Number of establishments considered.	Basic material.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
STEEL CASTINGS.				
1896, .....	7	\$418,609	\$	\$
1897, .....	7	402,115	—16,494	.....
1898, .....	7	517,448	+115,333	.....
1899, .....	7	822,724	+205,276	.....
1900, .....	7	618,748	—203,976	.....
1901, .....	7	574,406	—44,342	+155,797
STEEL BILLETS, SLABS, BLOOMS, ETC.				
1896, .....	4	5,724,832	.....	.....
1897, .....	4	7,363,930	+1,639,098	.....
1898, .....	4	8,285,732	+921,802	.....
1899, .....	4	14,459,812	+6,174,080	.....
1900, .....	4	13,200,979	—1,258,833	.....
1901, .....	4	14,531,245	+1,330,266	+8,806,413
TOOL STEEL.				
1896, .....	3	146,601	.....	.....
1897, .....	3	74,610	—71,991	.....
1898, .....	3	89,554	+14,944	.....

## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Basic material.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
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## TOOL STEEL—Continued.

1899, .....	3	\$96,154	+\$6,600	\$
1900, .....	3	78,514	—17,640	.....
1901, .....	3	126,488	+47,974	—20,113

## IRON AND STEEL FORGINGS.

1896, .....	7	141,286	.....	.....
1897, .....	7	122,710	—18,576	.....
1898, .....	7	157,035	+34,325	.....
1899, .....	7	252,496	+95,461	.....
1900, .....	7	241,555	—10,941	.....
1901, .....	7	281,056	+38,501	+139,770

## IRON SPECIALTIES.

1896, .....	2	47,113	.....	.....
1897, .....	2	77,228	+30,115	.....
1898, .....	2	45,879	—31,349	.....
1899, .....	2	48,083	+2,204	.....
1900, .....	2	51,684	+3,601	.....
1901, .....	2	53,750	+2,066	+6,637

## MALLEABLE IRON.

1896, .....	4	590,308	.....	.....
1897, .....	4	455,890	—134,418	.....
1898, .....	4	698,054	+242,164	.....
1899, .....	4	839,640	+141,586	.....
1900, .....	4	975,533	+135,893	.....
1901, .....	4	873,539	—101,994	+283,231

## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Basic material.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
BOLTS, NUTS, ETC.				
1896, .....	8	\$600,739	\$	\$
1897, .....	8	591,791	—8,948	.....
1898, .....	8	713,906	+122,115	.....
1899, .....	8	1,456,313	+742,407	.....
1900, .....	8	1,428,181	—28,132	.....
1901, .....	8	1,431,237	+3,056	+830,498
WIRE NAILS AND RIVETS.				
1896, .....	4	521,603	.....	.....
1897, .....	4	884,350	+362,747	.....
1898, .....	4	575,701	—308,649	.....
1899, .....	4	738,589	+162,888	.....
1900, .....	4	765,914	+27,325	.....
1901, .....	4	443,771	—322,143	—77,832
TACKS AND SMALL NAILS.				
1896, .....	4	48,253	.....	.....
1897, .....	4	40,862	—7,391	.....
1898, .....	4	35,049	—5,813	.....
1899, .....	4	68,184	+33,135	.....
1900, .....	4	64,075	—4,109	.....
1901, .....	4	70,748	+6,673	+22,495
WIRE.				
1896, .....	5	118,055	.....	.....
1897, .....	5	108,939	—9,116	.....
1898, .....	5	127,555	+18,616	.....

## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Basic material.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
WIRE—Continued.				
1899, .....	5	\$135,429	+\$7,874	\$
1900, .....	5	216,356	+80,927	.....
1901, .....	5	216,782	+426	+98,727
WIRE ROPE.				
1896, .....	2	292,275	.....	.....
1897, .....	2	230,111	—62,164	.....
1898, .....	2	248,135	+18,024	.....
1899, .....	2	361,009	+112,874	.....
1900, .....	2	1,035,106	+674,097	.....
1901, .....	2	1,089,791	+54,685	+797,516
WIRE GOODS.				
1896, .....	5	45,611	.....	.....
1897, .....	5	58,563	+12,952	.....
1898, .....	5	62,195	+3,632	.....
1899, .....	5	88,686	+26,491	.....
1900, .....	5	85,360	—3,326	.....
1901, .....	5	112,779	+27,419	+67,168
WAGON AND CARRIAGE AXLES AND SPRINGS.				
1896, .....	6	170,988	.....	.....
1897, .....	6	167,911	—3,077	.....
1898, .....	6	146,923	—20,988	.....
1899, .....	6	282,368	+135,445	.....
1900, .....	6	238,419	—43,949	.....
1901, .....	6	324,275	+85,856	+153,287

## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Basic material.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
SCALES, ETC.				
1896, .....	4	\$79,428	\$	\$
1897, .....	4	83,826	+4,398	.....
1898, .....	4	88,225	+4,399	.....
1899, .....	4	111,309	+23,084	.....
1900, .....	4	122,333	+11,024	.....
1901, .....	4	126,852	+4,519	+47,424
STOVES, RANGES, HEATERS, ETC.				
1896, .....	37	843,414	.....	.....
1897, .....	37	843,713	+299	.....
1898, .....	37	867,376	+23,663	.....
1899, .....	37	1,080,427	+213,051	.....
1900, .....	37	1,409,891	+329,464	.....
1901, .....	37	1,255,401	—154,490	+411,987
BATH BOILERS, TANKS, ETC.				
1896, .....	2	33,394	.....	.....
1897, .....	2	31,163	—2,231	.....
1898, .....	2	30,676	—487	.....
1899, .....	2	44,809	+14,133	.....
1900, .....	2	44,391	—418	.....
1901, .....	2	49,704	+5,313	+16,310
HARDWARE SPECIALTIES.				
1896, .....	14	637,416	.....	.....
1897, .....	14	668,089	+30,673	.....



BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Basic material.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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HARDWARE SPECIALTIES—  
Continued.

1898, .....	14	\$701,185	+\$33,096	\$
1899, .....	14	1,053,817	+352,632	.....
1900, .....	14	849,471	—204,346	.....
1901, .....	14	951,254	+101,783	+313,838

EDGE TOOLS.

1896, .....	12	453,478	.....	.....
1897, .....	12	223,034	—230,444	.....
1898, .....	12	293,289	+70,255	.....
1899, .....	12	399,445	+106,156	.....
1900, .....	12	486,985	+87,540	.....
1901, .....	12	500,219	+13,334	+46,741

WRENCHES, PICKS, ETC.

1896, .....	5	118,234	.....	.....
1897, .....	5	152,785	+34,551	.....
1898, .....	5	143,063	—9,722	.....
1899, .....	5	228,910	+85,847	.....
1900, .....	5	256,264	+27,354	.....
1901, .....	5	225,495	—30,769	+107,261

LOCOMOTIVES AND CARS  
BUILT AND REPAIRED.

1896, .....	3	3,738,754	.....	.....
1897, .....	3	3,276,309	—462,445	.....
1898, .....	3	4,191,152	+914,843	.....
1899, .....	3	5,634,355	+1,443,203	.....
1900, .....	3	6,459,641	+825,286	.....
1901, .....	3	6,483,061	+23,420	+2,744,307

## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Basic material.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
WROUGHT IRON PIPE AND TUBES.				
1896, .....	5	\$7,973,945	\$	\$
1897, .....	5	7,101,673	—872,272	.....
1898, .....	5	8,285,486	+1,183,813	.....
1899, .....	5	15,485,996	+7,200,510	.....
1900, .....	5	12,906,404	—2,579,592	.....
1901, .....	5	15,141,057	+2,234,653	+7,167,112
CAST IRON PIPE.				
1896, .....	3	573,580	.....	.....
1897, .....	3	767,967	+194,387	.....
1898, .....	3	810,511	+42,544	.....
1899, .....	3	912,507	+101,996	.....
1900, .....	3	1,123,503	+210,996	.....
1901, .....	3	1,254,082	+130,579	+680,502
BRASS, COPPER AND BRONZE GOODS.				
1896, .....	19	1,142,796	.....	.....
1897, .....	19	1,117,888	—24,908	.....
1898, .....	19	1,319,160	+201,272	.....
1899, .....	19	2,137,539	+818,379	.....
1900, .....	19	1,597,301	—540,238	.....
1901, .....	19	2,517,719	+920,418	+1,374,923
IRON AND STEEL BRIDGES.				
1896, .....	7	2,008,501	.....	.....
1897, .....	7	1,731,721	—276,780	.....

## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Basic material.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
IRON AND STEEL BRIDGES— Continued.				
1898, .....	7	\$2,126,144	+\$394,423	\$
1899, .....	7	3,193,878	+1,067,734	.....
1900, .....	7	5,544,996	+2,351,118	.....
1901, .....	7	3,802,840	—1,742,156	+1,794,339
LOCOMOTIVES, STATIONERY ENGINES, ETC.				
1896, .....	9	4,229,510	.....	.....
1897, .....	9	3,933,971	—295,539	.....
1898, .....	9	5,386,109	+1,452,138	.....
1899, .....	9	8,606,253	+3,220,144	.....
1900, .....	9	11,568,788	+2,962,535	.....
1901, .....	9	12,289,340	+720,552	+8,059,830
ENGINES, BOILERS, ETC.				
1896, .....	10	1,557,093	.....	.....
1897, .....	10	1,325,287	—231,806	.....
1898, .....	10	1,514,153	+188,866	.....
1899, .....	10	2,331,697	+817,544	.....
1900, .....	10	2,480,161	+148,464	.....
1901, .....	10	2,489,348	+9,187	+932,255
CARS, SPRINGS, AXLES AND RAILWAY SUPPLIES.				
1896, .....	12	2,270,778	.....	.....
1897, .....	12	1,938,862	—331,916	.....
1898, .....	12	2,757,366	+818,504	.....

## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments considered.	Basic material.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
<b>CARS, SPRINGS, AXLES AND RAILWAY SUPPLIES — Continued.</b>				
1899, .....	12	\$10,447,921	+\$7,690,555	\$
1900, .....	12	18,766,916	+8,318,995	.....
1901, .....	12	18,693,414	—73,502	+16,422,636
<b>IRON VESSELS AND ENGINES.</b>				
1896, .....	3	1,923,035	.....	.....
1897, .....	3	2,020,859	+97,824	.....
1898, .....	3	2,997,076	+976,217	.....
1899, .....	3	5,117,337	+2,120,261	.....
1900, .....	3	6,705,326	+1,587,989	.....
1901, .....	3	5,978,086	—727,240	+4,055,051
<b>BOILERS, TANKS, STACKS, ETC.</b>				
1896, .....	21	721,415	.....	.....
1897, .....	21	863,908	+102,493	.....
1898, .....	21	1,172,463	+308,555	.....
1899, .....	21	1,848,563	+676,100	.....
1900, .....	21	2,148,536	+299,973	.....
1901, .....	21	2,567,205	+418,669	+1,805,790
<b>MACHINERY.</b>				
1896, .....	21	1,741,304	.....	.....
1897, .....	21	1,698,519	—42,785	.....
1898, .....	21	2,030,334	+331,815	.....
1899, .....	21	3,239,736	+1,209,402	.....
1900, .....	21	3,607,094	+367,358	.....
1901, .....	21	3,825,721	+218,627	+2,084,417

## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Basic material.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
FOUNDRIES AND MACHINE SHOPS.				
1896, .....	25	\$875,986	\$	\$
1897, .....	25	1,049,859	+173,873	.....
1898, .....	25	1,263,302	+213,443	.....
1899, .....	25	1,925,085	+661,783	.....
1900, .....	25	2,036,612	+111,527	.....
1901, .....	25	2,080,142	+73,530	+1,204,156
FILES, ETC.				
1896, .....	2	95,440	.....	.....
1897, .....	2	92,201	—3,239	.....
1898, .....	2	82,739	—9,462	.....
1899, .....	2	105,104	+22,365	.....
1900, .....	2	113,699	+8,595	.....
1901, .....	2	118,953	+5,254	+23,513
SAWS.				
1896, .....	3	37,000	.....	.....
1897, .....	3	26,812	—10,188	.....
1898, .....	3	28,087	+1,275	.....
1899, .....	3	31,600	+3,513	.....
1900, .....	3	48,071	+16,471	.....
1901, .....	3	44,758	—3,313	+7,758
PLUMBER SUPPLIES.				
1896, .....	3	*	.....	.....
1897, .....	3	*	.....	.....
1898, .....	3	*	.....	.....

\*Incomplete returns.



## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Basic material.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
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## PLUMBER SUPPLIES—Continued.

1899, .....	3	\$552,190	\$	\$
1900, .....	3	425,043	—127,147	.....
1901, .....	3	485,511	+60,468	.....

## ELECTRICAL SUPPLIES.

1896, .....	4	1,337,362	.....	.....
1897, .....	4	1,365,199	+27,837	.....
1898, .....	4	2,340,407	+975,208	.....
1899, .....	4	3,573,084	+1,232,677	.....
1900, .....	5	5,375,117	+1,802,033	.....
1901, .....	4	5,696,529	+321,412	+4,359,167

SHOVELS, SPADES, SCOOPS,  
ETC.

1896, .....	8	313,871	.....	.....
1897, .....	8	276,019	—37,852	.....
1898, .....	8	296,298	+20,279	.....
1899, .....	8	465,999	+169,701	.....
1900, .....	8	406,234	—59,765	.....
1901, .....	8	541,074	+134,840	+227,203

## SAFES AND VAULT DOORS.

1896, .....	2	66,274	.....	.....
1897, .....	2	63,173	—3,101	.....
1898, .....	2	65,984	+2,811	.....
1899, .....	2	65,539	—445	.....
1900, .....	2	121,397	+55,858	.....
1901, .....	2	148,595	+27,198	+82,321

## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Basic material.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
METAL AND METALLIC GOODS.				
1896, .....	3	\$47,136	\$	\$
1897, .....	3	50,060	+2,924	.....
1898, .....	3	58,176	+8,116	.....
1899, .....	3	82,334	+24,158	.....
1900, .....	3	93,877	+11,543	.....
1901, .....	3	99,610	+5,733	+52,474
BUILDING AND STRUCTURAL IRON WORK.				
1896, .....	2	522,584	.....	.....
1897, .....	2	686,899	+164,315	.....
1898, .....	2	1,241,336	+554,437	.....
1899, .....	2	1,227,578	—13,758	.....
1900, .....	2	3,053,789	+1,826,211	.....
1901, .....	2	3,327,881	+274,092	+2,805,297
IRON CHAINS.				
1896, .....	5	127,022	.....	.....
1897, .....	5	126,244	—778	.....
1898, .....	5	165,742	+39,498	.....
1899, .....	5	252,412	+86,670	.....
1900, .....	5	239,225	—13,187	.....
1901, .....	5	239,113	—112	+112,091
IRON FENCES AND RAILINGS.				
1896, .....	7	47,937	.....	.....
1897, .....	7	58,623	+10,686	.....
1898, .....	7	81,971	+23,348	.....

## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Basic material.	increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
IRON FENCES AND RAILINGS —Continued.				
1899, .....	7	\$133,235	+\$51,264	\$
1900, .....	7	157,497	+24,262	.....
1901, .....	7	206,195	+48,698	+158,258
AGRICULTURAL IMPLEMENTS.				
1896, .....	12	1,025,789	.....	.....
1897, .....	12	1,027,645	+1,856	.....
1898, .....	12	1,171,437	+143,792	.....
1899, .....	12	1,381,353	+209,916	.....
1900, .....	12	1,483,154	+101,801	.....
1901, .....	12	1,494,064	+10,910	+468,275
STEAM PUMPS.				
1896, .....	2	146,725	.....	.....
1897, .....	2	127,524	—19,201	.....
1898, .....	2	123,813	—3,711	.....
1899, .....	2	176,738	+52,925	.....
1900, .....	2	200,479	+23,741	.....
1901, .....	2	178,558	—21,921	+31,833
BICYCLES.				
1896, .....	3	364,789	.....	.....
1897, .....	3	461,607	+96,818	.....
1898, .....	3	455,452	—6,155	.....
1899, .....	3	308,541	—146,911	.....
1900, .....	3	244,612	—63,929	.....
1901, .....	3	139,241	—105,371	—225,548

## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Basic material.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
PIANOS AND ORGANS.				
1896, .....	2	\$32,563	\$	\$
1897, .....	2	37,083	+4,520	.....
1898, .....	2	57,843	+20,760	.....
1899, .....	2	59,162	+1,319	.....
1900, .....	2	79,526	+20,364	.....
1901, .....	2	83,646	+4,120	+51,083
TINWARE.				
1896, .....	5	218,233	.....	.....
1897, .....	5	216,243	—1,990	.....
1898, .....	5	217,433	+1,190	.....
1899, .....	5	272,376	+54,943	.....
1900, .....	5	290,940	+18,564	.....
1901, .....	5	337,778	+46,838	+119,545
PAPER MANUFACTORIES.				
1896, .....	8	1,583,061	.....	.....
1897, .....	8	1,451,820	—131,241	.....
1898, .....	8	1,486,541	+34,721	.....
1899, .....	8	1,739,547	+253,006	.....
1900, .....	8	1,748,551	+9,004	.....
1901, .....	8	1,776,599	+28,048	+193,538
WALL PAPER.				
1896, .....	4	420,913	.....	.....
1897, .....	4	499,158	+78,245	.....
1898, .....	4	589,750	+90,592	.....

## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Basic material.	Increase(+) or decrease (--) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
WALL PAPER—Continued.				
1899, .....	4	\$627,300	+\$37,550	\$
1900, .....	4	595,111	—32,189	.....
1901, .....	4	650,626	+55,515	+ 229,713
CIGARS.				
1896, .....	46	2,703,269	.....	.....
1897, .....	46	3,274,003	+570,734	.....
1898, .....	46	3,654,579	+380,576	.....
1899, .....	46	3,797,460	+142,881	.....
1900, .....	46	4,033,899	+236,439	.....
1901, .....	46	3,965,446	—68,453	+1,262,177
BOOK BINDING.				
1896, .....	3	62,699	.....	.....
1897, .....	3	62,018	—681	.....
1898, .....	3	65,522	+3,504	.....
1899, .....	3	77,379	+11,857	.....
1900, .....	3	83,716	+6,337	.....
1901, .....	3	95,214	+11,498	+32,515
CORDAGE, ROPE AND TWINE.				
1896, .....	5	3,362,991	.....	.....
1897, .....	5	3,484,048	+121,057	.....
1898, .....	5	3,524,381	+40,333	.....
1899, .....	5	4,509,784	+985,403	.....
1900, .....	5	5,340,848	+831,064	.....
1901, .....	5	5,676,078	+335,230	+2,313,087



## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Basic material.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
PAPER, PAPER BOXES, ENVELOPES, ETC.				
1896, .....	27	\$936,025	\$	\$
1897, .....	27	967,556	+31,531	.....
1898, .....	27	1,044,300	+76,744	.....
1899, .....	27	1,129,745	+85,445	.....
1900, .....	27	1,235,711	+105,966	.....
1901, .....	27	1,158,423	—77,288	+222,398
POTTERY.				
1896, .....	2	68,215	.....	.....
1897, .....	2	56,290	—11,925	.....
1898, .....	2	56,589	+299	.....
1899, .....	2	54,604	—1,985	.....
1900, .....	2	64,561	+9,957	.....
1901, .....	2	72,323	+7,762	+4,108
PAVING BRICK.				
1896, .....	7	32,949	.....	.....
1897, .....	7	25,156	—7,793	.....
1898, .....	7	23,113	—2,043	.....
1899, .....	7	33,506	+10,393	.....
1900, .....	7	72,534	+39,028	.....
1901, .....	7	37,076	—35,458	+4,127
BUILDING BRICK.				
1896, .....	35	174,412	.....	.....
1897, .....	35	170,107	—4,305	.....
1898, .....	35	174,974	+4,867	.....

## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Basic material.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
BUILDING BRICK—Continued.				
1899, .....	35	\$181,106	+\$6,132	\$
1900, .....	35	165,202	—15,904	.....
1901, .....	35	181,600	+16,398	+7,188
FIRE BRICK.				
1896, .....	18	423,138	.....	.....
1897, .....	18	382,434	—40,704	.....
1898, .....	18	418,484	+36,050	.....
1899, .....	18	552,972	+134,488	.....
1900, .....	18	790,260	+237,288	.....
1901, .....	18	724,698	—65,562	+301,560
SLATE ROOFING, ETC., TONNAGE.				
1896, .....	6	32,540	.....	.....
1897, .....	6	36,721	+4,181	.....
1898, .....	6	32,421	—4,300	.....
1899, .....	6	31,861	—560	.....
1900, .....	6	28,146	—3,715	.....
1901, .....	6	42,098	+13,952	+9,558
SLATE ROOFING, ETC., SQUARES.				
1896, .....	14	55,722	.....	.....
1897, .....	14	66,448	+10,726	.....
1898, .....	14	69,499	+3,051	.....
1899, .....	14	80,325	+10,826	.....
1900, .....	14	69,280	—11,045	.....
1901, .....	14	86,468	+17,188	+30,746

## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Basic material.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
WINDOW GLASS, BOTTLES AND TABLE GOODS.				
1896, .....	22	\$1,511,890	\$	\$
1897, .....	22	1,623,801	+111,911	.....
1898, .....	22	1,587,765	—36,036	.....
1899, .....	22	1,990,388	+402,623	.....
1900, .....	22	2,050,111	+59,723	.....
1901, .....	22	1,790,190	—259,921	+278,300
GLAZED AND CHROME KID.				
1896, .....	7	5,635,016	.....	.....
1897, .....	7	7,036,904	+1,401,888	.....
1898, .....	7	8,092,540	+1,055,636	.....
1899, .....	7	11,007,875	+2,915,335	.....
1900, .....	7	9,330,221	—1,677,654	.....
1901, .....	9	9,553,784	+223,563	+3,918,768
MEN'S, WOMEN'S, MISSES' AND CHILDREN'S SHOES.				
1896, .....	15	2,853,067	.....	.....
1897, .....	15	3,085,003	+231,936	.....
1898, .....	15	3,187,425	+102,422	.....
1899, .....	15	3,293,639	+106,214	.....
1900, .....	15	3,179,012	—114,627	.....
1901, .....	15	3,346,106	+167,094	+493,039
SUSPENDERS.				
1896, .....	2	200,936	.....	.....
1897, .....	2	233,500	+32,564	.....

## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Basic material.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
SUSPENDERS—Continued.				
1898, .....	2	\$245,000	+\$11,500	\$
1899, .....	2	315,000	+70,000	.....
1900, .....	2	440,000	+125,000	.....
1901, .....	2	476,000	+36,000	+275,061
HATS AND CAPS.				
1896, .....	3	284,490	.....	.....
1897, .....	3	418,877	+134,387	.....
1898, .....	3	377,205	—41,672	.....
1899, .....	3	433,669	+56,464	.....
1900, .....	3	508,555	+74,886	.....
1901, .....	3	467,440	—41,115	+182,950
FUR AND FELT HATS.				
1896, .....	4	443,621	.....	.....
1897, .....	4	476,658	+33,037	.....
1898, .....	4	494,817	+18,159	.....
1899, .....	4	593,645	+98,828	.....
1900, .....	4	729,924	+136,279	.....
1901, .....	4	873,632	+143,708	+430,011
WOOL HATS.				
1896, .....	7	270,432	.....	.....
1897, .....	7	343,808	+73,376	.....
1898, .....	7	314,029	—29,779	.....
1899, .....	7	333,533	+19,504	.....
1900, .....	7	471,032	+137,499	.....
1901, .....	7	386,829	—84,203	+116,397
20—9—1901				

## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Basic material.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
UMBRELLAS AND PARASOLS.				
1896, .....	4	\$656,219	\$	\$
1897, .....	4	708,157	+51,938	.....
1898, .....	4	754,090	+45,933	.....
1899, .....	4	694,246	—59,844	.....
1900, .....	4	769,178	+74,932	.....
1901, .....	4	907,717	+138,539	+251,498
DRESS TRIMMINGS, BRAIDS, ETC.				
1896, .....	8	536,719	.....	.....
1897, .....	8	685,631	+148,912	.....
1898, .....	8	876,508	+190,877	.....
1899, .....	8	912,697	+36,189	.....
1900, .....	8	1,029,684	+116,987	.....
1901, .....	8	958,843	—70,841	+422,124
SHIRTS AND SHIRT WAISTS.				
1896, .....	9	984,847	.....	.....
1897, .....	9	974,269	—10,578	.....
1898, .....	9	1,143,081	+168,812	.....
1899, .....	9	1,342,360	+199,279	.....
1900, .....	9	1,411,543	+69,183	.....
1901, .....	9	1,403,516	—8,027	+418,669
NECKWEAR.				
1896, .....	3	217,642	.....	.....
1897, .....	3	200,833	—16,809	.....
1898, .....	3	214,342	+13,509	.....



## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Basic material.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
NECKWEAR—Continued.				
1899, .....	3	\$261,882	+\$47,540	\$
1900, .....	3	247,396	—14,486	.....
1901, .....	3	222,189	—25,207	+4,547
COTTON AND WOOLEN CLOTHS.				
1896, .....	24	2,904,386	.....	.....
1897, .....	24	3,781,507	+877,121	.....
1898, .....	24	3,745,019	—36,488	.....
1899, .....	24	4,768,367	+1,023,348	.....
1900, .....	24	4,519,160	—249,207	.....
1901, .....	24	4,452,102	—67,058	+1,547,716
CARPETS.				
1896, .....	17	2,131,394	.....	.....
1897, .....	17	2,765,114	+633,720	.....
1898, .....	17	2,850,838	+85,724	.....
1899, .....	17	3,494,859	+644,021	.....
1900, .....	17	3,512,455	+17,596	.....
1901, .....	17	3,882,593	+370,138	+1,751,199
COTTON GOODS.				
1896, .....	16	1,442,767	.....	.....
1897, .....	16	1,498,814	+56,047	.....
1898, .....	16	1,478,396	—20,418	.....
1899, .....	16	1,708,151	+229,755	.....
1900, .....	16	1,813,000	+104,849	.....
1901, .....	16	1,863,117	+50,117	+420,350

## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Basic material.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
WOOLEN AND WORSTED CAS- SIMERES.				
1896, .....	11	\$1,034,784	\$	\$
1897, .....	11	1,449,509	+414,725	.....
1898, .....	11	1,581,776	+132,267	.....
1899, .....	11	2,058,438	+476,662	.....
1900, .....	11	890,645	—1,167,793	.....
1901, .....	11	2,014,917	+1,124,272	+980,133
WOOLEN AND WORSTED FABRICS.				
1896, .....	16	2,037,245	.....	.....
1897, .....	16	2,924,303	+887,058	.....
1898, .....	16	3,030,628	+106,325	.....
1899, .....	16	3,542,014	+511,386	.....
1900, .....	16	4,110,454	+568,440	.....
1901, .....	16	3,701,075	—409,379	+1,663,830
WOOLEN AND WORSTED YARNS.				
1896, .....	12	1,211,445	.....	.....
1897, .....	12	2,111,958	+900,513	.....
1898, .....	12	1,994,012	—117,946	.....
1899, .....	12	2,636,300	+642,288	.....
1900, .....	12	2,370,290	—266,010	.....
1901, .....	12	2,999,031	+628,741	+1,787,586
RUGS, YARNS, ETC.				
1896, .....	5	1,954,855	.....	.....
1897, .....	5	1,909,431	—45,424	.....

## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Basic material.	pared with the preced- ing year.	1901 as compared with 1896.
RUGS, YARNS, ETC.—Continued.				
1898, .....	5	\$1,741,967	—\$167,464	\$
1899, .....	5	1,937,653	+195,686	.....
1900, .....	5	2,059,524	+121,871	.....
1901, .....	5	2,047,869	—11,655	+93,014
CARPET YARNS.				
1896, .....	11	839,240	.....	.....
1897, .....	11	1,278,068	+438,828	.....
1898, .....	11	946,871	—331,197	.....
1899, .....	11	1,251,831	+304,960	.....
1900, .....	11	1,188,499	—63,332	.....
1901, .....	11	1,249,013	+60,514	+409,773
COTTON YARNS.				
1896, .....	7	760,547	.....	.....
1897, .....	7	754,701	—5,846	.....
1898, .....	7	759,380	+4,679	.....
1899, .....	7	798,654	+39,274	.....
1900, .....	7	987,430	+188,776	.....
1901, .....	7	837,474	—49,956	+76,927
WORSTED, WOOLEN AND COTTON YARNS.				
1896, .....	10	1,370,289	.....	.....
1897, .....	10	1,947,247	+576,958	.....
1898, .....	10	1,724,655	—222,592	.....
1899, .....	10	2,447,491	+722,836	.....
1900, .....	10	2,887,072	+439,581	.....
1901, .....	10	2,715,543	—171,529	+1,345,254

## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Basic material.	Increase(+) or decrease (-) as com- pared with the preced- ing year.	Increase (+) or de- crease(-) 1901 as compared with 1896.
WOOLEN BLANKETS, FLANNELS, ETC.				
1896, .....	5	\$620,465	\$	\$
1897, .....	5	638,333	+17,868	.....
1898, .....	5	1,133,808	+495,475	.....
1899, .....	5	815,512	-318,296	.....
1900, .....	5	737,822	-77,690	.....
1901, .....	5	887,731	+149,909	+267,266
LACE GOODS.				
1896, .....	3	190,499	.....	.....
1897, .....	3	252,059	+61,560	.....
1898, .....	3	290,322	+38,263	.....
1899, .....	3	350,185	+59,863	.....
1900, .....	3	384,509	+34,324	.....
1901, .....	3	438,178	+53,669	+247,679
CHENILLE GOODS.				
1896, .....	3	297,395	.....	.....
1897, .....	3	329,695	+32,300	.....
1898, .....	3	356,595	+26,900	.....
1899, .....	3	365,058	+8,463	.....
1900, .....	3	401,696	+36,638	.....
1901, .....	3	426,241	+24,545	+128,846
UPHOLSTERY GOODS.				
1896, .....	10	1,427,820	.....	.....
1897, .....	10	1,498,449	+70,629	.....
1898, .....	10	1,626,165	+127,716	.....
1899, .....	10	1,730,220	+104,055	.....

## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Basic material.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
UPHOLSTERY GOODS—Con- tinued.				
1900, .....	10	\$1,546,240	—\$183,980	\$
1901, .....	10	1,537,781	—8,459	+109,961
KNIT GOODS, UNDERWEAR.				
1896, .....	13	1,759,305	.....	.....
1897, .....	13	1,925,739	+166,434	.....
1898, .....	13	2,058,746	+133,007	.....
1899, .....	13	2,215,033	+156,287	.....
1900, .....	13	2,926,399	+711,366	.....
1901, .....	13	2,537,073	—389,326	+777,768
HOSIERY.				
1896, .....	31	1,626,945	.....	.....
1897, .....	31	2,117,807	+490,862	.....
1898, .....	31	2,312,556	+194,749	.....
1899, .....	31	2,306,461	—6,095	.....
1900, .....	31	2,634,225	+327,764	.....
1901, .....	31	2,737,834	+103,609	+1,110,889
SILK—BROAD GOODS, THROWN SILK, YARNS, ETC.				
1896, .....	6	2,331,078	.....	.....
1897, .....	6	3,310,003	+978,925	.....
1898, .....	6	3,764,644	+454,641	.....
1899, .....	6	4,699,556	+934,912	.....
1900, .....	6	4,598,479	—101,077	.....
1901, .....	6	3,646,366	—952,113	+1,315,288



## BASIC MATERIAL—Continued.

COMPARISON OF AGGREGATE COST OF BASIC MATERIAL—SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Basic material.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
SILK—BROAD GOODS AND RIB- BONS.				
1896, .....	2	\$700,000	\$	\$
1897, .....	2	1,000,000	+300,000	.....
1898, .....	2	1,200,000	+200,000	.....
1899, .....	2	1,315,000	+115,000	.....
1900, .....	2	1,128,292	—186,708	.....
1901, .....	2	1,202,479	+74,187	+502,479
SILK—RIBBONS.				
1896, .....	4	309,883	.....	.....
1897, .....	4	459,658	+149,775	.....
1898, .....	4	514,851	—55,193	.....
1899, .....	4	517,973	+3,122	.....
1900, .....	4	478,708	—39,265	.....
1901, .....	4	676,037	+197,329	+366,154

## DAYS IN OPERATION.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

NOTE.—In this table the average number of days of employment by the same establishments for the years 1896, 1897, 1898, 1899, 1900 and 1901 is presented, with the relative increase or decrease, together with the increase or decrease 1901 over 1896. Eighty-eight industries, representing 801 establishments, are considered.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## STEEL CASTINGS.

1896, .....	7	290	.....	.....
1897, .....	7	310	+20	.....
1898, .....	7	310	.....	.....
1899, .....	7	302	—8	.....
1900, .....	7	307	+5	.....
1901, .....	7	302	—5	+12

STEEL BILLETS, SLABS,  
BLOOMS, ETC.

1896, .....	4	204	.....	.....
1897, .....	4	291	+87	.....
1898, .....	4	286	—5	.....
1899, .....	4	295	+9	.....
1900, .....	4	246	—49	.....
1901, .....	4	290	+44	+86

## TOOL STEEL.

1896, .....	3	267	.....	.....
1897, .....	3	242	—25	.....
1898, .....	3	311	+69	.....
1899, .....	3	291	—20	.....

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
TOOL STEEL—Continued.				
1900, .....	3	292	+1	.....
1901, .....	3	295	+3	+28
IRON AND STEEL FORGINGS.				
1896, .....	7	256	.....	.....
1897, .....	7	281	+25	.....
1898, .....	7	293	+12	.....
1899, .....	7	300	+7	.....
1900, .....	7	292	—8	.....
1901, .....	7	278	—14	+22
IRON SPECIALTIES.				
1896, .....	2	301	.....	.....
1897, .....	2	301	.....	.....
1898, .....	2	301	.....	.....
1899, .....	2	301	.....	.....
1900, .....	2	301	.....	.....
1901, .....	2	301	.....	.....
MALLEABLE IRON.				
1896, .....	4	292	.....	.....
1897, .....	4	292	.....	.....
1898, .....	4	298	+6	.....
1899, .....	4	298	.....	.....
1900, .....	4	291	—7	.....
1901, .....	4	286	—5	—6

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1892.
BOLTS, NUTS, ETC.				
1896, .....	8	235	.....	.....
1897, .....	8	262	+27	.....
1898, .....	8	274	+12	.....
1899, .....	8	284	+10	.....
1900, .....	8	291	+7	.....
1901, .....	8	306	+15	+71
WIRE NAILS AND RIVETS.				
1896, .....	4	241	.....	.....
1897, .....	4	250	+9	.....
1898, .....	4	189	—61	.....
1899, .....	4	142	—47	.....
1900, .....	4	116	—26	.....
1901, .....	4	301	+185	+60
TACKS AND SMALL NAILS.				
1896, .....	4	226	.....	.....
1897, .....	4	209	—17	.....
1898, .....	4	248	+39	.....
1899, .....	4	280	+32	.....
1900, .....	4	253	—27	.....
1901, .....	4	280	+27	+54
WIRE.				
1896, .....	5	285	.....	.....
1897, .....	5	265	—20	.....
1898, .....	5	319	+54	.....

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
WIRE—Continued.				
1899, .....	5	323	+4	.....
1900, .....	5	301	—22	.....
1901, .....	5	302	+1	+17
WIRE ROPE.				
1896, .....	2	302	.....	.....
1897, .....	2	303	+1	.....
1898, .....	2	303	.....	.....
1899, .....	2	304	+1	.....
1900, .....	2	306	+2	.....
1901, .....	2	308	+2	+6
WIRE GOODS.				
1896, .....	5	296	.....	.....
1897, .....	5	300	+4	.....
1898, .....	5	301	+1	.....
1899, .....	5	301	.....	.....
1900, .....	5	301	.....	.....
1901, .....	5	294	—7	—2
WAGON AND CARRIAGE AXLES AND SPRINGS.				
1896, .....	6	254	.....	.....
1897, .....	6	276	+22	.....
1898, .....	6	289	+13	.....
1899, .....	6	285	—4	.....
1900, .....	6	278	—7	.....
1901, .....	6	277	—1	+23



## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## SCALES, ETC.

1896, .....	4	276	.....	.....
1897, .....	4	285	+9	.....
1898, .....	4	298	+13	.....
1899, .....	4	302	+4	.....
1900, .....	4	298	—4	.....
1901, .....	4	293	—5	+17

## STOVES, RANGES, HEATERS, ETC.

1896, .....	37	209	.....	.....
1897, .....	37	228	+19	.....
1898, .....	37	237	+9	.....
1899, .....	37	254	+17	.....
1900, .....	37	245	—9	.....
1901, .....	37	249	+4	+40

## BATH BOILERS, TANKS, ETC.

1896, .....	2	309	.....	.....
1897, .....	2	305	—4	.....
1898, .....	2	302	—3	.....
1899, .....	2	304	+2	.....
1900, .....	2	308	+4	.....
1901, .....	2	304	—4	—5

## HARDWARE SPECIALTIES.

1896, .....	14	260	.....	.....
1897, .....	14	270	+10	.....

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease(—) 1901 as compared with 1896.
HARDWARE SPECIALTIES— Continued.				
1898, .....	14	256	—14	.....
1899, .....	14	280	+24	.....
1900, .....	14	249	—31	.....
1901, .....	14	296	+47	+36
EDGE TOOLS.				
1896, .....	12	246	.....	.....
1897, .....	12	227	—19	.....
1898, .....	12	291	+64	.....
1899, .....	12	294	+3	.....
1900, .....	12	297	+3	.....
1901, .....	12	297	.....	+51
WRENCHES, PICKS, ETC.				
1896, .....	5	240	.....	.....
1897, .....	5	266	+26	.....
1898, .....	5	283	+17	.....
1899, .....	5	293	+10	.....
1900, .....	5	280	—13	.....
1901, .....	5	281	+1	+41
LOCOMOTIVES AND CARS BUILT AND REPAIRED.				
1896, .....	3	273	.....	.....
1897, .....	3	282	+9	.....
1898, .....	3	296	+14	.....
1899, .....	3	304	+8	.....

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average number of days in operation.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
LOCOMOTIVES AND CARS BUILT AND REPAIRED—Continued.				
1900, .....	3	303	—1	.....
1901, .....	3	304	+1	+31
WROUGHT IRON PIPE AND TUBES.				
1896, .....	5	283	.....	.....
1897, .....	5	298	+15	.....
1898, .....	5	303	+5	.....
1899, .....	5	269	—34	.....
1900, .....	5	266	—3	.....
1901, .....	5	284	+18	+1
CAST IRON PIPE.				
1896, .....	3	303	.....	.....
1897, .....	3	302	—1	.....
1898, .....	3	296	—6	.....
1899, .....	3	252	—44	.....
1900, .....	3	306	+54	.....
1901, .....	3	315	+9	+12
BRASS, COPPER AND BRONZE GOODS.				
1896, .....	19	295	.....	.....
1897, .....	19	294	—1	.....
1898, .....	19	297	+3	.....
1899, .....	19	303	+6	.....
1900, .....	19	299	—4	.....
1901, .....	19	305	+6	+10

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
IRON AND STEEL BRIDGES.				
1896, .....	7	294	.....	.....
1897, .....	7	298	+4	.....
1898, .....	7	302	+4	.....
1899, .....	7	280	—22	.....
1900, .....	7	301	+21	.....
1901, .....	7	309	+8	+15
LOCOMOTIVES, STATIONERY ENGINES, ETC.				
1896, .....	9	306	.....	.....
1897, .....	9	306	.....	.....
1898, .....	9	305	—1	.....
1899, .....	9	307	+2	.....
1900, .....	9	307	.....	.....
1901, .....	9	303	—4	—3
ENGINES, BOILERS, ETC.				
1896, .....	10	295	.....	.....
1897, .....	10	294	—1	.....
1898, .....	10	304	+10	.....
1899, .....	10	301	—3	.....
1900, .....	10	306	+5	.....
1901, .....	10	303	—3	+8
CARS, SPRINGS, AXLES AND RAILWAY SUPPLIES.				
1896, .....	12	260	.....	.....
1897, .....	12	280	+20	.....

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease(—) as compared with the preceding year.	Increase(+) or decrease(—) 1901 as compared with 1896.
CAR SPRINGS, AXLES AND RAILWAY SUPPLIES — Continued.				
1898, .....	12	295	+15	.....
1899, .....	12	309	+14	.....
1900, .....	12	311	+2	.....
1901, .....	12	308	—3	+48
IRON VESSELS AND ENGINES.				
1896, .....	3	306	.....	.....
1897, .....	3	305	—1	.....
1898, .....	3	304	—1	.....
1899, .....	3	296	—8	.....
1900, .....	3	292	—4	.....
1901, .....	3	330	+38	+24
BOILERS, TANKS, STACKS, ETC.				
1896, .....	21	286	.....	.....
1897, .....	21	285	—1	.....
1898, .....	21	291	+6	.....
1899, .....	21	304	+13	.....
1900, .....	21	305	+1	.....
1901, .....	21	298	—7	+12
MACHINERY.				
1896, .....	21	301	.....	.....
1897, .....	21	309	+8	.....
1898, .....	21	300	—9	.....
1899, .....	21	302	+2	.....
21—9—1901				



## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
1900, .....	21	302	.....	.....
1901, .....	21	307	+5	+6
FOUNDRIES AND MACHINE SHOPS.				
1896, .....	25	286	.....	.....
1897, .....	25	295	+9	.....
1898, .....	25	296	+1	.....
1899, .....	25	304	+8	.....
1900, .....	25	300	—4	.....
1901, .....	25	303	+3	+17
FILES, ETC.				
1896, .....	2	275	.....	.....
1897, .....	2	266	—9	.....
1898, .....	2	278	+12	.....
1899, .....	2	302	+24	.....
1900, .....	2	295	—7	.....
1901, .....	2	288	—7	+13
SAWS.				
1896, .....	3	229	.....	.....
1897, .....	3	210	—19	.....
1898, .....	3	244	+34	.....
1899, .....	3	250	+6	.....
1900, .....	3	281	+31	.....
1901, .....	3	288	+7	+59

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## PLUMBER SUPPLIES.

1896, .....	3	281	.....	.....
1897, .....	3	269	—12	.....
1898, .....	3	290	+21	.....
1899, .....	3	312	+22	.....
1900, .....	3	312	.....	.....
1901, .....	3	332	+20	+51

## ELECTRICAL SUPPLIES.

1896, .....	4	289	.....	.....
1897, .....	4	297	+8	.....
1898, .....	4	301	+4	.....
1899, .....	4	302	+1	.....
1900, .....	4	296	—6	.....
1901, .....	4	300	+4	+11

SHOVELS, SPADES, SCOOPS,  
ETC.

1896, .....	8	210	.....	.....
1897, .....	8	219	+9	.....
1898, .....	8	246	+27	.....
1899, .....	8	281	+35	.....
1900, .....	8	253	—28	.....
1901, .....	8	283	+30	+73

## SAFES AND VAULT DOORS.

1896, .....	2	307	.....	.....
1897, .....	2	301	—6	.....

DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average number of days in operation.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
SAFES AND VAULT DOORS— Continued.				
1898, .....	2	298	—3	.....
1899, .....	2	294	—4	.....
1900, .....	2	290	—4	.....
1901, .....	2	303	+13	—4
METAL AND METALLIC GOODS.				
1896, .....	3	234	.....	.....
1897, .....	3	258	+24	.....
1898, .....	3	255	—3	.....
1899, .....	3	265	+10	.....
1900, .....	3	275	+10	.....
1901, .....	3	294	+19	+60
BUILDING AND STRUCTURAL IRON WORK.				
1896, .....	2	301	.....	.....
1897, .....	2	302	+1	.....
1898, .....	2	307	+5	.....
1899, .....	2	305	—2	.....
1900, .....	2	306	+1	.....
1901, .....	2	306	.....	+5
IRON CHAINS.				
1896, .....	5	264	.....	.....
1897, .....	5	272	+8	.....
1898, .....	5	298	+26	.....
1899, .....	5	296	—2	.....

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
IRON CHAINS—Continued.				
1900, .....	5	252	—44	.....
1901, .....	5	290	+38	+26
IRON FENCES AND RAILINGS.				
1896, .....	7	293	.....	.....
1897, .....	7	298	+5	.....
1898, .....	7	305	+7	.....
1899, .....	7	303	—2	.....
1900, .....	7	305	+2	.....
1901, .....	7	306	+1	+13
AGRICULTURAL IMPLEMENTS.				
1896, .....	12	287	.....	.....
1897, .....	12	293	+6	.....
1898, .....	12	300	+7	.....
1899, .....	12	298	—2	.....
1900, .....	12	299	+1	.....
1901, .....	12	302	+3	+15
STEAM PUMPS.				
1896, .....	2	307	.....	.....
1897, .....	2	307	.....	.....
1898, .....	2	304	—3	.....
1899, .....	2	301	—3	.....
1900, .....	2	301	.....	.....
1901, .....	2	302	+1	—5

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average number of days in operation.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
BICYCLES.				
1896, .....	3	268	.....	.....
1897, .....	3	280	+12	.....
1898, .....	3	277	—3	.....
1899, .....	3	275	—2	.....
1900, .....	3	236	—39	.....
1901, .....	3	274	+38	+8
PIANOS AND ORGANS.				
1896, .....	2	271	.....	.....
1897, .....	2	292	+21	.....
1898, .....	2	294	+2	.....
1899, .....	2	293	—1	.....
1900, .....	2	292	—1	.....
1901, .....	2	296	+4	+25
TINWARE.				
1896, .....	5	301	.....	.....
1897, .....	5	301	.....	.....
1898, .....	5	300	—1	.....
1899, .....	5	301	+1	.....
1900, .....	5	300	—1	.....
1901, .....	5	272	—28	—29
PAPER MANUFACTORIES.				
1896, .....	8	262	.....	.....
1897, .....	8	277	+15	.....
1898, .....	8	283	+6	.....



## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase (+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
PAPER MANUFACTORIES.—Continued.				
1899, .....	8	284	+1	.....
1900, .....	8	297	+13	.....
1901, .....	8	293	—4	+31
WALL PAPER.				
1896, .....	4	258	.....	.....
1897, .....	4	283	+25	.....
1898, .....	4	284	+1	.....
1899, .....	4	282	—2	.....
1900, .....	4	280	—2	.....
1901, .....	4	285	+5	+27
CIGARS.				
1896, .....	46	287	.....	.....
1897, .....	46	291	+4	.....
1898, .....	46	293	+2	.....
1899, .....	46	295	+2	.....
1900, .....	46	296	+1	.....
1901, .....	46	294	—2	+7
BOOK BINDING.				
1896, .....	3	301	.....	.....
1897, .....	3	280	—21	.....
1898, .....	3	283	+3	.....
1899, .....	3	280	—3	.....
1900, .....	3	288	+8	.....
1901, .....	3	290	+2	—11

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
CORDAGE ROPE AND TWINE.				
1896, .....	5	288	.....	.....
1897, .....	5	317	+29	.....
1898, .....	5	312	—5	.....
1899, .....	5	312	.....	.....
1900, .....	5	300	—12	.....
1901, .....	5	300	.....	+12
PAPER, PAPER BOXES, ENVELOPES, ETC.				
1896, .....	27	297	.....	.....
1897, .....	27	301	+4	.....
1898, .....	27	302	+1	.....
1899, .....	27	303	+1	.....
1900, .....	27	300	—3	.....
1901, .....	27	301	+1	+4
POTTERY.				
1896, .....	2	302	.....	.....
1897, .....	2	287	—15	.....
1898, .....	2	291	+4	.....
1899, .....	2	298	+7	.....
1900, .....	2	288	—10	.....
1901, .....	2	304	+16	+2
PAVING BRICK.				
1896, .....	7	255	.....	.....
1897, .....	7	247	—8	.....

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
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## PAVING BRICK—Continued.

1898, .....	7	246	—1	.....
1899, .....	7	230	—16	.....
1900, .....	7	270	+40	.....
1901, .....	7	234	—36	—21

## BUILDING BRICK.

1896, .....	35	229	.....	.....
1897, .....	35	227	—2	.....
1898, .....	35	218	—9	.....
1899, .....	35	220	+2	.....
1900, .....	35	217	—3	.....
1901, .....	35	230	+13	+1

## FIRE BRICK.

1896, .....	18	283	.....	.....
1897, .....	18	281	—2	.....
1898, .....	18	243	—38	.....
1899, .....	18	249	+6	.....
1900, .....	18	300	+51	.....
1901, .....	18	298	—2	+15

SLATE ROOFING, ETC., TON-  
NAGE.

1896, .....	6	229	.....	.....
1897, .....	6	226	—3	.....
1898, .....	6	245	+19	.....
1899, .....	6	236	—9	.....
1900, .....	6	255	+19	.....
1901, .....	6	268	+13	+39

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
SLATE ROOFING, ETC., SQUARES.				
1896, .....	14	238	.....	.....
1897, .....	14	239	+1	.....
1898, .....	14	177	—62	.....
1899, .....	14	245	+68	.....
1900, .....	14	244	—1	.....
1901, .....	14	254	+10	+16
WINDOW GLASS, BOTTLES AND TABLE GOODS.				
1896, .....	22	240	.....	.....
1897, .....	22	263	+23	.....
1898, .....	22	276	+13	.....
1899, .....	22	283	+7	.....
1900, .....	22	265	—18	.....
1901, .....	22	256	—9	+16
GLAZED AND CHROME KID.				
1896, .....	7	299	.....	.....
1897, .....	7	301	+2	.....
1898, .....	7	298	—3	.....
1899, .....	7	300	+2	.....
1900, .....	7	270	—30	.....
1901, .....	7	298	+28	—1
MEN'S. WOMEN'S, MISSES' AND CHILDREN'S SHOES.				
1896, .....	15	281	.....	.....
1897, .....	15	292	+11	.....

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase (+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
MENS', WOMEN'S, MISSES AND CHILDREN'S SHOES — Continued.				
1898, .....	15	288	—4	.....
1899, .....	15	298	+10	.....
1900, .....	15	295	—3	.....
1901, .....	15	299	+4	+18
SUSPENDERS.				
1896, .....	2	295	.....	.....
1897, .....	2	403	+108	.....
1898, .....	2	297	—106	.....
1899, .....	2	299	+2	.....
1900, .....	2	298	—1	.....
1901, .....	2	298	.....	+3
HATS AND CAPS.				
1896, .....	3	284	.....	.....
1897, .....	3	289	+5	.....
1898, .....	3	286	—3	.....
1899, .....	3	283	—3	.....
1900, .....	3	282	—1	.....
1901, .....	3	287	+5	+3
FUR AND FELT HATS.				
1896, .....	4	307	.....	.....
1897, .....	4	308	+1	.....
1898, .....	4	307	—1	.....
1899, .....	4	309	+2	.....
1900, .....	4	309	.....	.....
1901, .....	4	308	—1	+1



DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average number of days in operation.	Increase(+) or decrease (-) as com- pared with the preced- ing year.	Increase (+) or de- crease(-) 1901 as compared with 1896.
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WOOL HATS.

1896, .....	7	274	.....	.....
1897, .....	7	260	--14	.....
1898, .....	7	279	+19	. . . .
1899, .....	7	266	-13	. . . .
1900, .....	7	294	+28	.....
1901, .....	7	282	-12	+ 8

UMBRELLAS AND PARASOLS.

1896, .....	4	307	.....	.....
1897, .....	4	307	.....	.....
1898, .....	4	308	+1	.....
1899, .....	4	308	.....	.....
1900, .....	4	306	-2	.....
1901, .....	4	306	.....	-1

DRESS TRIMMINGS, BRAIDS,  
ETC.

1896, .....	8	287	.....	.....
1897, .....	8	295	+8	.....
1898, .....	8	298	+3	.....
1899, .....	8	301	+3	.....
1900, .....	8	302	+1	.....
1901, .....	8	292	-10	+5

SHIRTS AND SHIRT WAISTS.

1896, .....	9	286	.....	.....
1897, .....	9	298	+12	.....

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
SHIRTS AND SHIRT WAISTS— Continued.				
1898, .....	9	298	.....	.....
1899, .....	9	298	.....	.....
1900, .....	9	299	+1	.....
1901, .....	9	299	.....	+13
NECKWEAR.				
1896, .....	3	308	.....	.....
1897, .....	3	306	—2	.....
1898, .....	3	308	+2	.....
1899, .....	3	308	.....	.....
1900, .....	3	308	.....	.....
1901, .....	3	308	.....	.....
COTTON AND WOOLEN CLOTHS.				
1896, .....	24	269	.....	.....
1897, .....	24	286	+17	.....
1898, .....	24	266	—20	.....
1899, .....	24	273	+7	.....
1900, .....	24	278	+5	.....
1901, .....	24	280	+2	+11
CARPETS.				
1896, .....	17	264	.....	.....
1897, .....	17	292	+28	.....
1898, .....	17	292	.....	.....
1899, .....	17	302	+10	.....
1900, .....	17	297	—5	.....
1901, .....	17	298	+1	+34

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
COTTON GOODS.				
1896, .....	16	262	.....	.....
1897, .....	16	279	+17	.....
1898, .....	16	290	+11	.....
1899, .....	16	296	+6	.....
1900, .....	16	290	—6	.....
1901, .....	16	287	—3	+25
WOOLEN AND WORSTED CASSIMERES.				
1896, .....	11	270	.....	.....
1897, .....	11	277	+7	.....
1898, .....	11	262	—15	.....
1899, .....	11	281	+19	.....
1900, .....	11	289	+8	.....
1901, .....	11	278	—11	+8
WOOLEN AND WORSTED FABRICS.				
1896, .....	16	247	.....	.....
1897, .....	16	289	+42	.....
1898, .....	16	288	—1	.....
1899, .....	16	296	+8	.....
1900, .....	16	293	—3	.....
1901, .....	16	291	—2	+44
WOOLEN AND WORSTED YARNS.				
1896, .....	12	248	.....	.....
1897, .....	12	290	+42	.....

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
WOOLEN AND WORSTED YARNS—Continued.				
1898, .....	12	289	—1	.....
1899, .....	12	291	+2	.....
1900, .....	12	279	—12	.....
1901, .....	12	292	+13	+44
RUGS, YARNS, ETC.				
1896, .....	5	256	.....	.....
1897, .....	5	270	+14	.....
1898, .....	5	277	+7	.....
1899, .....	5	285	+8	.....
1900, .....	5	292	+7	.....
1901, .....	5	279	—13	+23
CARPET YARNS.				
1896, .....	11	265	.....	.....
1897, .....	11	298	+33	.....
1898, .....	11	266	—32	.....
1899, .....	11	299	+33	.....
1900, .....	11	277	—22	.....
1901, .....	11	291	+14	+26
COTTON YARNS.				
1896, .....	7	265	.....	.....
1897, .....	7	275	+10	.....
1898, .....	7	294	+19	.....
1899, .....	7	290	—4	.....
1900, .....	7	295	+5	.....
1901, .....	7	285	—10	+20

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
WORSTED WOOLEN AND COTTON YARNS.				
1896, .....	10	245	.....	.....
1897, .....	10	289	+44	.....
1898, .....	10	246	—43	.....
1899, .....	10	277	+31	.....
1900, .....	10	294	+17	.....
1901, .....	10	273	—21	+28
WOOLEN BLANKETS, FLANNELS, ETC.				
1896, .....	5	304	.....	.....
1897, .....	5	301	—3	.....
1898, .....	5	351	+50	.....
1899, .....	5	279	—72	.....
1900, .....	5	303	+24	.....
1901, .....	5	291	—12	—13
LACE GOODS.				
1896, .....	3	274	.....	.....
1897, .....	3	296	+22	.....
1898, .....	3	307	+11	.....
1899, .....	3	305	—2	.....
1900, .....	3	303	—2	.....
1901, .....	3	302	—1	+28
CHENILLE GOODS.				
1896, .....	3	279	.....	.....
1897, .....	3	300	+21	.....



## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average number of days in operation.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
CHENILLE GOODS—Continued.				
1898, .....	3	300	.....	.....
1899, .....	3	300	.....	.....
1900, .....	3	301	+1	.....
1901, .....	3	304	+3	+25
UPHOLSTERY GOODS.				
1896, .....	10	294	.....	.....
1897, .....	10	299	+5	.....
1898, .....	10	301	+2	.....
1899, .....	10	290	—11	.....
1900, .....	10	269	—21	.....
1901, .....	10	287	+18	—7
KNIT GOODS, UNDERWEAR.				
1896, .....	13	271	.....	.....
1897, .....	13	289	+18	.....
1898, .....	13	280	—9	.....
1899, .....	13	279	—1	.....
1900, .....	13	291	+12	.....
1901, .....	13	282	—9	+11
HOSIERY.				
1896, .....	31	256	.....	.....
1897, .....	31	290	+34	.....
1898, .....	31	286	—4	.....
1899, .....	31	281	—5	.....
1900, .....	31	287	+6	.....
1901, .....	31	290	+3	+34

## DAYS IN OPERATION—Continued.

COMPARISON OF AVERAGE NUMBER OF DAYS IN OPERATION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average number of days in operation.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
SILK—BROAD GOODS, THROWN SILK, YARNS, ETC.				
1896, .....	6	275	.....	.....
1897, .....	6	301	+26	.....
1898, .....	6	293	—8	.....
1899, .....	6	278	—15	.....
1900, .....	6	282	+4	.....
1901, .....	6	262	—20	—13
SILK—BROAD GOODS AND RIB- BONS.				
1896, .....	2	301	.....	.....
1897, .....	2	301	.....	.....
1898, .....	2	302	+1	.....
1899, .....	2	301	—1	.....
1900, .....	2	299	—2	.....
1901, .....	2	301	+2	.....
SILK—RIBBONS.				
1896, .....	4	298	.....	.....
1897, .....	4	299	+1	.....
1898, .....	4	299	.....	.....
1899, .....	4	293	—6	.....
1900, .....	4	283	—10	.....
1901, .....	4	302	+19	+4

## PERSONS EMPLOYED.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

NOTE.—In this table the average number of persons employed by the same establishments for the years 1896, 1897, 1898, 1899, 1900 and 1901 is presented, with the relative increase or decrease, together with the increase or decrease 1901 over 1896. Eighty-eight industries, representing 801 establishments, are considered.

Character of Industry and Years.	Number of establishments considered.	Total number of wage earners.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
STEEL CASTINGS.				
1896, .....	7	1,016	.....	.....
1897, .....	7	1,068	+52	.....
1898, .....	7	1,363	+295	.....
1899, .....	7	1,705	+342	.....
1900, .....	7	1,741	+36	.....
1901, .....	7	1,478	—263	+462
STEEL BILLETS, SLABS, BLOOMS, ETC.				
1896, .....	4	1,392	.....	.....
1897, .....	4	1,278	—114	.....
1898, .....	4	1,475	+197	.....
1899, .....	4	1,802	+327	.....
1900, .....	4	1,682	—120	.....
1901, .....	4	1,838	+156	+446
TOOL STEEL.				
1896, .....	3	160	.....	.....
1897, .....	3	159	—1	.....
1898, .....	3	214	+55	.....
1899, .....	3	209	—5	.....
1900, .....	3	132	—77	.....
1901, .....	3	167	+35	+7

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total number of wage earners.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
IRON AND STEEL FORGINGS.				
1896, .....	7	254	.....	.....
1897, .....	7	244	—10	.....
1898, .....	7	318	+74	.....
1899, .....	7	395	+77	.....
1900, .....	7	384	—11	.....
1901, .....	7	482	+98	+228
IRON SPECIALTIES.				
1896, .....	2	37	.....	.....
1897, .....	2	45	+8	.....
1898, .....	2	35	—10	.....
1899, .....	2	31	—4	.....
1900, .....	2	42	+11	.....
1901, .....	2	53	+11	+16
MALLEABLE IRON.				
1896, .....	4	1,575	.....	.....
1897, .....	4	1,404	—171	.....
1898, .....	4	1,640	+236	.....
1899, .....	4	1,831	+191	.....
1900, .....	4	1,671	—160	.....
1901, .....	4	1,905	+234	+330
BOLTS, NUTS, ETC.				
1896, .....	8	942	.....	.....
1897, .....	8	966	+24	.....
1898, .....	8	1,010	+44	.....
1899, .....	8	1,268	+258	.....

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Total number of wage earners.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
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## BOLTS, NUTS, ETC.—Continued.

1900, .....	8	1,324	+56	.....
1901, .....	8	1,573	+249	+631

## WIRE NAILS AND RIVETS.

1896, .....	4	499	.....	.....
1897, .....	4	644	+145	.....
1898, .....	4	644	.....	.....
1899, .....	4	725	+81	.....
1900, .....	4	812	+87	.....
1901, .....	4	255	—557	—244

## TACKS AND SMALL NAILS.

1896, .....	4	118	.....	.....
1897, .....	4	114	—4	.....
1898, .....	4	68	—46	.....
1899, .....	4	158	+90	.....
1900, .....	4	141	—17	.....
1901, .....	4	142	+1	+24

## WIRE.

1896, .....	5	97	.....	.....
1897, .....	5	105	+8	.....
1898, .....	5	122	+17	.....
1899, .....	5	157	+35	.....
1900, .....	5	254	+97	.....
1901, .....	5	258	+4	+161



## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments considered.	Total number of wage earners.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease(—) 1901 as compared with 1896.
WIRE ROPE.				
1896, .....	2	158	.....	.....
1897, .....	2	166	+8	.....
1898, .....	2	190	+24	.....
1899, .....	2	232	+42	.....
1900, .....	2	342	+110	.....
1901, .....	2	393	+51	+235
WIRE GOODS.				
1896, .....	5	194	.....	.....
1897, .....	5	215	+21	.....
1898, .....	5	228	+13	.....
1899, .....	5	257	+29	.....
1900, .....	5	208	—49	.....
1901, .....	5	242	+34	+48
WAGON AND CARRIAGE AXLES AND SPRINGS.				
1896, .....	6	353	.....	.....
1897, .....	6	353	.....	.....
1898, .....	6	403	+50	.....
1899, .....	6	494	+91	.....
1900, .....	6	473	—21	.....
1901, .....	6	618	+145	+265
SCALES, ETC.				
1896, .....	4	113	.....	.....
1897, .....	4	122	+9	.....
1898, .....	4	134	+12	.....

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total number of wage earners.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## SCALES, ETC.—Continued.

1899, .....	4	159	+25	.....
1900, .....	4	177	+18	.....
1901, .....	4	183	+6	+70

STOVES, RANGES, HEATERS,  
ETC.

1896, .....	37	3,447	.....	.....
1897, .....	37	3,543	+96	.....
1898, .....	37	3,627	+84	.....
1899, .....	37	3,682	+55	.....
1900, .....	37	3,758	+76	.....
1901, .....	37	3,773	+15	+326

## BATH BOILERS, TANKS, ETC.

1896, .....	2	26	.....	.....
1897, .....	2	28	+2	.....
1898, .....	2	32	+4	.....
1899, .....	2	45	+13	.....
1900, .....	2	38	—7	.....
1901, .....	2	44	+6	+18

## HARDWARE SPECIALTIES.

1896, .....	14	2,509	.....	.....
1897, .....	14	2,643	+134	.....
1898, .....	14	2,871	+228	.....
1899, .....	14	3,307	+436	.....
1900, .....	14	3,154	—153	.....
1901, .....	14	3,133	—21	+624

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total number of wage earners.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## EDGE TOOLS.

1896, .....	12	818	.....	.....
1897, .....	12	827	+9	.....
1898, .....	12	878	+51	.....
1899, .....	12	1,018	+140	.....
1900, .....	12	1,077	+59	.....
1901, .....	12	1,097	+20	+279

## WRENCHES, PICKS, ETC.

1896, .....	5	248	.....	.....
1897, .....	5	293	+45	.....
1898, .....	5	272	—21	.....
1899, .....	5	341	+61	.....
1900, .....	5	386	+45	.....
1901, .....	5	357	—29	+109

## LOCOMOTIVES AND CARS BUILT AND REPAIRED.

1896, .....	3	6,254	.....	.....
1897, .....	3	5,742	—512	.....
1898, .....	3	5,965	+223	.....
1899, .....	3	6,655	+690	.....
1900, .....	3	7,185	+530	.....
1901, .....	3	7,498	+313	+1,244

## WROUGHT IRON PIPE AND TUBES.

1896, .....	5	5,324	.....	.....
1897, .....	5	5,110	—214	.....

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total number of wage earners.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
WROUGHT IRON PIPE AND TUBES—Continued.				
1898, .....	5	5,693	+583	.....
1899, .....	5	8,754	+3,061	.....
1900, .....	5	5,420	—3,334	.....
1901, .....	5	6,574	+1,154	+1,250
CAST IRON PIPE.				
1896, .....	3	507	.....	.....
1897, .....	3	615	+108	.....
1898, .....	3	689	+74	.....
1899, .....	3	740	+51	.....
1900, .....	3	797	+57	.....
1901, .....	3	841	+44	+334
BRASS, COPPER AND BRONZE GOODS.				
1896, .....	19	1,210	.....	.....
1897, .....	19	1,185	—25	.....
1898, .....	19	1,327	+142	.....
1899, .....	19	1,507	+180	.....
1900, .....	19	1,582	+75	.....
1901, .....	19	1,760	+178	+550
IRON AND STEEL BRIDGES.				
1896, .....	7	1,169	.....	.....
1897, .....	7	1,177	+8	.....
1898, .....	7	1,423	+246	.....
1899, .....	7	1,680	+257	.....
1900, .....	7	2,233	+553	.....
1901, .....	7	2,076	—157	+907

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Total number of wage earners.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
LOCOMOTIVES, STATIONERY ENGINES, ETC.				
1896, .....	9	5,587	.....	.....
1897, .....	9	5,651	+64	.....
1898, .....	9	7,967	+2,316	.....
1899, .....	9	9,827	+1,860	.....
1900, .....	9	12,003	+2,176	.....
1901, .....	9	13,298	+1,295	+7,711
ENGINES, BOILERS, ETC.				
1896, .....	10	1,922	.....	.....
1897, .....	10	1,690	—232	.....
1898, .....	10	1,904	+214	.....
1899, .....	10	2,163	+259	.....
1900, .....	10	2,373	+210	.....
1901, .....	10	2,533	+160	+611
CARS, SPRINGS, AXLES AND RAILWAY SUPPLIES.				
1896, .....	12	2,240	.....	.....
1897, .....	12	2,306	+66	.....
1898, .....	12	3,130	+824	.....
1899, .....	12	6,343	+3,213	.....
1900, .....	12	9,125	+2,782	.....
1901, .....	12	9,737	+612	+7,497
IRON VESSELS AND ENGINES.				
1896, .....	3	4,044	.....	.....
1897, .....	3	3,447	—597	.....
1898, .....	3	5,384	+1,937	.....



## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total number of wage earners.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
IRON VESSELS AND ENGINES— Continued.				
1899, .....	3	6,188	+804	.....
1900, .....	3	6,677	+489	.....
1901, .....	3	6,268	—409	+2,224
BOILERS, TANKS, STACKS, ETC.				
1896, .....	21	1,161	.....	.....
1897, .....	21	1,128	—33	.....
1898, .....	21	1,386	+258	.....
1899, .....	21	1,627	+241	.....
1900, .....	21	1,933	+306	.....
1901, .....	21	2,135	+202	+974
MACHINERY.				
1896, .....	21	3,721	.....	.....
1897, .....	21	3,853	+132	.....
1898, .....	21	4,434	+581	.....
1899, .....	21	5,630	+1,196	.....
1900, .....	21	6,100	+470	.....
1901, .....	21	6,342	+242	+2,621
FOUNDRIES AND MACHINE SHOPS.				
1896, .....	25	2,127	.....	.....
1897, .....	25	2,101	—26	.....
1898, .....	25	2,447	+346	.....
1899, .....	25	3,104	+657	.....
1900, .....	25	3,204	+100	.....
1901, .....	25	3,622	+418	+1,495

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Total number of wage earners.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
FILES, ETC.				
1896, .....	2	331	.....	.....
1897, .....	2	346	+15	.....
1898, .....	2	369	+23	.....
1899, .....	2	394	+25	.....
1900, .....	2	422	+28	.....
1901, .....	2	415	—7	+84
SAWS.				
1896, .....	3	56	.....	.....
1897, .....	3	50	—6	.....
1898, .....	3	47	—3	.....
1899, .....	3	47	.....	.....
1900, .....	3	56	+9	.....
1901, .....	3	57	+1	+1
PLUMBER SUPPLIES.				
1896, .....	3	960	.....	.....
1897, .....	3	921	—39	.....
1898, .....	3	965	+44	.....
1899, .....	3	1,046	+81	.....
1900, .....	3	1,048	+2	.....
1901, .....	3	1,086	+38	+126
ELECTRICAL SUPPLIES.				
1896, .....	4	2,528	.....	.....
1897, .....	4	2,173	—355	.....
1898, .....	4	3,499	+1,326	.....
1899, .....	4	5,184	+1,685	.....

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Total number of wage earners.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
ELECTRICAL SUPPLIES—Con- tinued.				
1900, .....	4	6,210	+1,026	.....
1901, .....	4	7,212	+1,002	+4,684
SHOVELS, SPADES, SCOOPS, ETC.				
1896, .....	8	545	.....	.....
1897, .....	8	511	—34	.....
1898, .....	8	528	+17	.....
1899, .....	8	563	+35	.....
1900, .....	8	532	—31	.....
1901, .....	8	592	+60	+47
SAFES AND VAULT DOORS.				
1896, .....	2	128	.....	.....
1897, .....	2	125	—3	.....
1898, .....	2	121	—4	.....
1899, .....	2	120	—1	.....
1900, .....	2	180	+60	.....
1901, .....	2	224	+44	+96
METAL AND METALLIC GOODS.				
1896, .....	3	194	.....	.....
1897, .....	3	207	+13	.....
1898, .....	3	225	+18	.....
1899, .....	3	269	+44	.....
1900, .....	3	297	+28	.....
1901, .....	3	252	—45	+58

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total number of wage earners.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
BUILDING AND STRUCTURAL IRON WORK.				
1896, .....	2	752	.....	.....
1897, .....	2	662	—90	.....
1898, .....	2	841	+179	.....
1899, .....	2	1,240	+399	.....
1900, .....	2	1,678	+438	.....
1901, .....	2	2,286	+608	+1,534
IRON CHAINS.				
1896, .....	5	231	.....	.....
1897, .....	5	231	.....	.....
1898, .....	5	269	+38	.....
1899, .....	5	299	+30	.....
1900, .....	5	264	—35	.....
1901, .....	5	288	+24	+57
IRON FENCES AND RAILINGS.				
1896, .....	7	79	.....	.....
1897, .....	7	100	+21	.....
1898, .....	7	126	+26	.....
1899, .....	7	155	+29	.....
1900, .....	7	197	+42	.....
1901, .....	7	220	+23	+141
AGRICULTURAL IMPLEMENTS.				
1896, .....	12	1,295	.....	.....
1897, .....	12	1,322	+27	.....
1898, .....	12	1,499	+177	.....

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total number of wage earners.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
AGRICULTURAL IMPLEMENTS Continued.				
1899, .....	12	1,595	+96	.....
1900, .....	12	1,587	—8	.....
1901, .....	12	1,594	+7	+299
STEAM PUMPS.				
1896, .....	2	153	.....	.....
1897, .....	2	140	—13	.....
1898, .....	2	151	+11	.....
1899, .....	2	225	+74	.....
1900, .....	2	268	+43	.....
1901, .....	2	231	—37	+78
BICYCLES.				
1896, .....	3	222	.....	.....
1897, .....	3	255	+33	.....
1898, .....	3	352	+97	.....
1899, .....	3	297	—55	.....
1900, .....	3	256	—41	.....
1901, .....	3	97	—159	—125
PIANOS AND ORGANS.				
1896, .....	2	80	.....	.....
1897, .....	2	77	—3	.....
1898, .....	2	95	+18	.....
1899, .....	2	105	+10	.....
1900, .....	2	146	+41	.....
1901, .....	2	150	+4	+70



## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total number of wage earners.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
TINWARE.				
1896, .....	5	284	.....	.....
1897, .....	5	275	—9	.....
1898, .....	5	278	+3	.....
1899, .....	5	275	—3	.....
1900, .....	5	328	+53	.....
1901, .....	5	461	+133	+177
PAPER MANUFACTORIES.				
1896, .....	8	1,521	.....	.....
1897, .....	8	1,474	—47	.....
1898, .....	8	1,483	+9	.....
1899, .....	8	1,681	+198	.....
1900, .....	8	1,740	+59	.....
1901, .....	8	1,725	—15	+204
WALL PAPER.				
1896, .....	4	362	.....	.....
1897, .....	4	381	+19	.....
1898, .....	4	402	+26	.....
1899, .....	4	401	+1	.....
1900, .....	4	349	—52	.....
1901, .....	4	371	+22	+9
CIGARS.				
1896, .....	46	6,559	.....	.....
1897, .....	46	7,301	+742	.....
1898, .....	46	7,800	+499	.....
1899, .....	46	8,308	+508	.....

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Total number of wage earners.	Increase (+) or decrease (-) as com- pared with the preced- ing year.	Increase (+) or de- crease (-) 1901 as compared with 1896.
CIGARS—Continued.				
1900, .....	46	8,668	+360	.....
1901, .....	46	8,866	+198	+2,307
BOOK BINDING.				
1896, .....	3	138	.....	.....
1897, .....	3	137	-1	.....
1898, .....	3	156	+19	.....
1899, .....	3	176	+20	.....
1900, .....	3	188	+12	.....
1901, .....	3	188	.....	+50
CORDAGE ROPE AND TWINE.				
1896, .....	5	2,055	.....	.....
1897, .....	5	2,119	+64	.....
1898, .....	5	2,091	-28	.....
1899, .....	5	2,191	+100	.....
1900, .....	5	2,256	+65	.....
1901, .....	5	2,294	+38	+239
PAPER, PAPER BOXES, EN- VELOPES, ETC.				
1896, .....	27	1,826	.....	.....
1897, .....	27	1,911	+85	.....
1898, .....	27	2,472	+561	.....
1899, .....	27	2,302	-170	.....
1900, .....	27	2,242	-60	.....
1901, .....	27	2,138	-104	+312

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total number of wage earners.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
POTTERY.				
1896, .....	2	146	.....	.....
1897, .....	2	145	—1	.....
1898, .....	2	153	+8	.....
1899, .....	2	162	+9	.....
1900, .....	2	172	+10	.....
1901, .....	2	171	—1	+25
PAVING BRICK.				
1896, .....	7	437	.....	.....
1897, .....	7	429	—8	.....
1898, .....	7	447	+18	.....
1899, .....	7	528	+81	.....
1900, .....	7	587	+59	.....
1901, .....	7	553	—34	+116
BUILDING BRICK.				
1896, .....	35	1,939	.....	.....
1897, .....	35	1,852	—87	.....
1898, .....	35	1,905	+53	.....
1899, .....	35	1,894	—11	.....
1900, .....	35	1,865	—29	.....
1901, .....	35	1,954	+89	+15
FIRE BRICK.				
1896, .....	18	1,868	.....	.....
1897, .....	18	1,928	+60	.....
1898, .....	18	2,327	+399	.....
1899, .....	18	2,947	+620	.....

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total number of wage earners.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
FIRE BRICK—Continued.				
1900, .....	18	3,823	+876	.....
1901, .....	18	3,787	—36	+1,919
SLATE ROOFING, ETC, TON- NAGE.				
1896, .....	6	830	.....	.....
1897, .....	6	830	.....	.....
1898, .....	6	762	—68	.....
1899, .....	6	664	—98	.....
1900, .....	6	764	+100	.....
1901, .....	6	907	+143	+77
SLATE ROOFING, ETC., SQUARES.				
1896, .....	14	1,254	.....	.....
1897, .....	14	1,354	+100	.....
1898, .....	14	1,875	+521	.....
1899, .....	14	1,552	—323	.....
1900, .....	14	1,560	+8	.....
1901, .....	14	1,578	+18	+324
WINDOW GLASS, BOTTLES AND TABLE GOODS.				
1896, .....	22	7,110	.....	.....
1897, .....	22	7,151	+41	.....
1898, .....	22	7,735	+584	.....
1899, .....	22	8,699	+964	.....
1900, .....	22	9,943	+1,244	.....
1901, .....	22	8,820	—1,123	+1,710

PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Total number of wage earners.	Increase (+) or decrease (−) as com- pared with the preced- ing year.	Increase (+) or de- crease (−) 1901 as compared with 1896.
GLAZED AND CHROME KID.				
1896, .....	7	2,725	.....	.....
1897, .....	7	3,255	+530	.....
1898, .....	7	3,745	+490	.....
1899, . .....	7	4,598	+853	.....
1900, .....	7	4,439	—59	.....
1901, .....	7	4,783	+344	+2,058
MEN'S, WOMEN'S, MISSES AND CHILDREN'S SHOES.				
1896, .....	15	3,401	.....	.....
1897, .....	15	3,514	+113	.....
1898, .....	15	3,688	+174	.....
1899, .....	15	3,488	—200	.....
1900, .....	15	3,467	—21	.....
1901, .....	15	3,524	+57	+123
SUSPENDERS.				
1896, .....	2	110	.....	.....
1897, .....	2	120	+10	.....
1898, .....	2	127	+7	.....
1899, .....	2	162	+35	.....
1900, .....	2	212	+50	.....
1901, .....	2	198	—14	+88
HATS AND CAPS.				
1896, .....	3	490	.....	.....
1897, .....	3	489	—1	.....
1898, .....	3	560	+71	.....



## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total number of wage earners.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## HATS AND CAPS—Continued.

1899, .....	3	560	.....	.....
1900, .....	3	614	+54	.....
1901, .....	3	691	+77	+201

## FUR AND FELT HATS.

1896, .....	4	963	.....	.....
1897, .....	4	1,048	+85	.....
1898, .....	4	1,257	+209	.....
1899, .....	4	1,412	+155	.....
1900, .....	4	1,687	+275	.....
1901, .....	4	2,060	+373	+1,097

## WOOL HATS.

1896, .....	7	395	.....	.....
1897, .....	7	447	+52	.....
1898, .....	7	480	+33	.....
1899, .....	7	537	+57	.....
1900, .....	7	563	+26	.....
1901, .....	7	538	—25	+143

## UMBRELLAS AND PARASOLS.

1896, .....	4	589	.....	.....
1897, .....	4	575	—14	.....
1898, .....	4	505	—70	.....
1899, .....	4	531	+26	.....
1900, .....	4	506	—25	.....
1901, .....	4	522	+16	—67

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total number of wage earners.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
DRESS TRIMMINGS, BRAIDS, ETC.				
1896, .....	8	1,104	.....	.....
1897, .....	8	1,393	+289	.....
1898, .....	8	1,543	+150	.....
1899, .....	8	1,760	+217	.....
1900, .....	8	1,745	—15	.....
1901, .....	8	1,669	—76	+565
SHIRTS AND SHIRT WAISTS.				
1896, .....	9	1,804	.....	.....
1897, .....	9	1,819	+15	.....
1898, .....	9	1,993	+174	.....
1899, .....	9	2,294	+301	.....
1900, .....	9	2,338	+44	.....
1901, .....	9	2,419	+81	+615
NECKWEAR.				
1896, .....	3	190	.....	.....
1897, .....	3	174	—16	.....
1898, .....	3	183	+9	.....
1899, .....	3	195	+12	.....
1900, .....	3	189	—6	.....
1901, .....	3	181	—8	—9
COTTON AND WOOLEN CLOTHS.				
1896, .....	24	4,463	.....	.....
1897, .....	24	4,754	+291	.....
1898, .....	24	4,705	—49	.....

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total number of wage earners.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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COTTON AND WOOLEN CLOTHS  
Continued.

1899, .....	24	5,193	+488	.....
1890, .....	24	5,724	+531	.....
1901, .....	24	5,341	—383	+878

## CARPETS.

1896, .....	17	2,263	.....	.....
1897, .....	17	2,704	+441	.....
1898, .....	17	2,753	+49	.....
1899, .....	17	2,834	+81	.....
1900, .....	17	2,794	—40	.....
1901, .....	17	2,801	+7	+538

## COTTON GOODS.

1896, .....	16	2,807	.....	.....
1897, .....	16	2,866	+59	.....
1898, .....	16	3,007	+141	.....
1899, .....	16	3,294	+287	.....
1900, .....	16	3,223	—71	.....
1901, .....	16	3,112	—111	+305

## WOOLEN AND WORSTED CASSIMERES.

1896, .....	11	1,373	.....	.....
1897, .....	11	1,572	+199	.....
1898, .....	11	1,700	+128	.....
1899, .....	11	1,928	+228	.....
1900, .....	11	1,927	—1	.....
1901, .....	11	1,971	+44	+598

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total number of wage earners.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
WOOLEN AND WORSTED FABRICS.				
1896, .....	16	2,783	.....	.....
1897, .....	16	3,307	+524	.....
1898, .....	16	3,075	—232	.....
1899, .....	16	3,414	+339	.....
1900, .....	16	3,917	+503	.....
1901, .....	16	3,294	—623	+511
WOOLEN AND WORSTED YARNS.				
1896, .....	12	1,526	.....	.....
1897, .....	12	1,532	+6	.....
1898, .....	12	1,445	—87	.....
1899, .....	12	1,478	+33	.....
1900, .....	12	1,641	+163	.....
1901, .....	12	1,658	+17	+132
RUGS, YARNS, ETC.				
1896, .....	5	3,134	.....	.....
1897, .....	5	3,069	—65	.....
1898, .....	5	2,926	—143	.....
1899, .....	5	3,074	+148	.....
1900, .....	5	3,170	+96	.....
1901, .....	5	3,209	+39	+75
CARPET YARNS.				
1896, .....	11	563	.....	.....
1897, .....	11	625	+62	.....
1898, .....	11	577	—48	.....

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total number of wage earners.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
CARPET YARNS—Continued.				
1899, .....	11	633	+56	.....
1900, .....	11	670	+37	.....
1901, .....	11	688	+18	+125
COTTON YARNS.				
1896, .....	7	695	.....	.....
1897, .....	7	719	+24	.....
1898, .....	7	795	+76	.....
1899, .....	7	800	+5	.....
1900, .....	7	870	+70	.....
1901, .....	7	720	—150	+25
WORSTED WOOLEN AND COTTON YARNS.				
1896, .....	10	1,634	.....	.....
1897, .....	10	1,875	+241	.....
1898, .....	10	1,915	+40	.....
1899, .....	10	1,904	—11	.....
1900, .....	10	2,210	+306	.....
1901, .....	10	2,277	+67	+643
WOOLEN BLANKETS, FLANNELS, ETC.				
1896, .....	5	717	.....	.....
1897, .....	5	719	+2	.....
1898, .....	5	1,063	+344	.....
1899, .....	5	967	—96	.....
1900, .....	5	894	—73	.....
1901, .....	5	912	+18	+195



## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total number of wage earners.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
LACE GOODS.				
1896, .....	3	763	.....	.....
1897, .....	3	855	+92	.....
1898, .....	3	974	+119	.....
1899, .....	3	1,098	+124	.....
1900, .....	3	1,251	+153	.....
1901, .....	3	1,238	—13	+475
CHENILLE GOODS.				
1896, .....	3	610	.....	.....
1897, .....	3	668	+58	.....
1898, .....	3	599	—69	.....
1899, .....	3	601	+2	.....
1900, .....	3	654	+53	.....
1901, .....	3	680	+26	+70
UPHOLSTERY GOODS.				
1896, .....	10	1,938	.....	.....
1897, .....	10	2,059	+121	.....
1898, .....	10	2,127	+68	.....
1899, .....	10	2,278	+151	.....
1900, .....	10	2,123	—150	.....
1901, .....	10	2,216	+88	+278
KNIT GOODS, UNDERWEAR.				
1896, .....	13	2,333	.....	.....
1897, .....	13	2,570	+237	.....
1898, .....	13	2,568	—2	.....
1899, .....	13	2,864	+296	.....

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total number of wage earners.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
KNIT GOODS, UNDERWEAR— Continued.				
1900, .....	13	3,188	+324	.....
1901, .....	13	2,980	—208	+647
HOSIERY.				
1896, .....	31	4,757	.....	.....
1897, .....	31	5,606	+849	.....
1898, .....	31	5,917	+311	.....
1899, .....	31	6,146	+229	.....
1900, .....	31	6,593	+447	.....
1901, .....	31	6,756	+163	+1,999
SILK—BROAD GOODS, THROWN SILK, YARNS, ETC.				
1896, .....	6	2,294	.....	.....
1897, .....	6	3,479	+1,185	.....
1898, .....	6	3,789	+310	.....
1899, .....	6	3,601	—188	.....
1900, .....	6	3,790	+189	.....
1901, .....	6	4,033	+243	+1,739
SILK—BROAD GOODS AND RIBBONS.				
1896, .....	2	1,300	.....	.....
1897, .....	2	2,050	+750	.....
1898, .....	2	2,200	+150	.....
1899, .....	2	2,000	—200	.....
1900, .....	2	1,750	—250	.....
1901, .....	2	2,400	+650	+1,100

## PERSONS EMPLOYED—Continued.

COMPARISON OF NUMBER OF WAGE EARNERS—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Total number of wage earners.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
SILK RIBBONS.				
1896, .....	4	431	.....	.....
1897, .....	4	535	+104	.....
1898, .....	4	634	+99	.....
1899, .....	4	644	+10	.....
1900, .....	4	728	+84	.....
1901, .....	4	909	+181	+478

## AGGREGATE WAGES PAID.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

NOTE.—In this table the aggregate amount of wages paid by the same establishments for the year 1896, 1897, 1898, 1899, 1900 and 1901 is presented, with the relative increase or decrease, together with the increase or decrease 1901 over 1896. Eighty-eight industries, representing 801 establishments, are considered.

Character of Industry and Years.	Number of establishments considered.	Aggregate wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease(—) 1901 as compared with 1896.
STEEL CASTINGS.				
1896, .....	7	\$463,012	\$	\$
1897, .....	7	478,303	+\$15,291	.....
1898, .....	7	619,179	+140,876	.....
1899, .....	7	838,679	+219,500	.....
1900, .....	7	821,510	—17,169	.....
1901, .....	7	734,578	—86,932	+271,566
STEEL BILLETS, SLABS, BLOOMS, ETC.				
1896, .....	4	621,985	.....	.....
1897, .....	4	630,474	+8,489	.....
1898, .....	4	873,163	+242,689	.....
1899, .....	4	1,239,839	+366,676	.....
1900, .....	4	1,087,913	—151,926	.....
1901, .....	4	1,411,838	+323,925	+789,853
TOOL STEEL.				
1896, .....	3	88,646	.....	.....
1897, .....	3	74,319	—4,327	.....
1898, .....	3	153,303	+78,984	.....
1899, .....	3	140,945	—12,358	.....
1900, .....	3	98,601	—42,344	.....
1901, .....	3	131,830	+33,229	+43,184

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Aggregate wages paid.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
IRON AND STEEL FORGINGS.				
1896, .....	7	\$121,567	\$	\$
1897, .....	7	120,823	—744	.....
1898, .....	7	175,796	+54,973	.....
1899, .....	7	249,106	+73,310	.....
1900, .....	7	263,271	+14,165	.....
1901, .....	7	255,175	—8,096	+133,608
IRON SPECIALTIES.				
1896, .....	2	17,700	.....	.....
1897, .....	2	22,700	+5,000	.....
1898, .....	2	18,700	—4,000	.....
1899, .....	2	18,350	—350	.....
1900, .....	2	20,350	+2,000	.....
1901, .....	2	25,372	+5,022	+7,672
MALLEABLE IRON.				
1896, .....	4	709,933	.....	.....
1897, .....	4	647,054	—62,879	.....
1898, .....	4	776,815	+129,761	.....
1899, .....	4	928,417	+151,602	.....
1900, .....	4	866,482	—61,935	.....
1901, .....	4	939,514	+73,032	+229,581
BOLTS, NUTS, ETC.				
1896, .....	8	361,981	.....	.....
1897, .....	8	308,126	—53,855	.....
1898, .....	8	348,639	+40,513	.....
1899, .....	8	477,994	+129,355	.....



## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
BOLTS, NUTS, ETC.—Continued.				
1900, .....	8	\$508,683	+\$30,689	\$
1901, .....	8	571,990	+63,307	+210,009
WIRE NAILS AND RIVETS.				
1896, .....	4	158,859	.....	.....
1897, .....	4	247,270	+88,411	.....
1898, .....	4	185,422	—61,848	.....
1899, .....	4	244,745	+59,323	.....
1900, .....	4	165,895	—78,850	.....
1901, .....	4	115,167	—50,728	—43,692
TACKS AND SMALL NAILS.				
1896, .....	4	34,122	.....	.....
1897, .....	4	31,752	—2,370	.....
1898, .....	4	24,483	—7,269	.....
1899, .....	4	54,460	+29,977	.....
1900, .....	4	44,982	—9,478	.....
1901, .....	4	49,715	+4,733	+15,593
WIRE.				
1896, .....	5	44,882	.....	.....
1897, .....	5	39,962	—4,920	.....
1898, .....	5	59,750	+19,788	.....
1899, .....	5	77,437	+17,687	.....
1900, .....	5	104,066	+26,629	.....
1901, .....	5	107,069	+3,003	+62,187
WIRE ROPE.				
1896, .....	2	70,108	.....	.....

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## WIRE ROPE—Continued.

1897, .....	2	\$74,810	+\$4,702	\$
1898, .....	2	88,858	+14,048	.....
1899, .....	2	113,217	+24,359	.....
1900, .....	2	164,517	+51,300	.....
1901, .....	2	169,682	+5,165	+99,574

## WIRE GOODS.

1896, .....	5	56,708	.....	.....
1897, .....	5	66,854	+10,146	.....
1898, .....	5	63,323	—3,531	.....
1899, .....	5	82,879	+19,556	.....
1900, .....	5	64,328	—18,551	.....
1901, .....	5	72,771	+8,443	+16,063

WAGON AND CARRIAGE AXLES  
AND SPRINGS.

1896, .....	6	171,015	.....	.....
1897, .....	6	179,198	+8,183	.....
1898, .....	6	210,517	+31,319	.....
1899, .....	6	257,772	+47,255	.....
1900, .....	6	237,358	—20,414	.....
1901, .....	6	306,789	+69,431	+135,774

## SCALES, ETC.

1896, .....	4	66,550	.....	.....
1897, .....	4	69,185	+2,635	.....
1898, .....	4	75,860	+6,675	.....
1899, .....	4	96,360	+20,500	.....

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## SCALES, ETC.—Continued.

1900, .....	4	\$105,851	+\$9,491	\$
1901, .....	4	111,951	+6,100	+45,401

## STOVES, RANGES, HEATERS, ETC.

1896, .....	37	1,626,876	.....	.....
1897, .....	37	1,647,548	+20,672	.....
1898, .....	37	1,153,955	—493,593	.....
1899, .....	37	1,970,880	+816,925	.....
1900, .....	37	2,126,605	+155,725	.....
1901, .....	37	2,084,170	—42,435	+457,294

## BATH BOILERS, TANKS, ETC.

1896, .....	2	12,091	.....	.....
1897, .....	2	12,498	+407	.....
1898, .....	2	13,611	+1,113	.....
1899, .....	2	19,448	+5,837	.....
1900, .....	2	16,804	—2,644	.....
1901, .....	2	20,030	+3,226	+7,939

## HARDWARE SPECIALTIES.

1896, .....	14	1,004,650	.....	.....
1897, .....	14	1,053,746	+49,096	.....
1898, .....	14	1,127,879	+74,133	.....
1899, .....	14	1,428,934	+301,055	.....
1900, .....	14	1,226,396	—202,538	.....
1901, .....	14	1,349,901	+123,505	+345,251

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
EDGE TOOLS.				
1896, .....	12	\$356,401	\$	\$
1897, .....	12	304,988	—51,413	.....
1898, .....	12	401,694	+96,706	.....
1899, .....	12	474,562	+72,868	.....
1900, .....	12	507,597	+33,035	.....
1901, .....	12	494,080	—13,517	+137,679
WRENCHES, PICKS, ETC.				
1896, .....	5	106,369	.....	.....
1897, .....	5	123,034	+16,665	.....
1898, .....	5	139,125	+16,091	.....
1899, .....	5	179,408	+40,283	.....
1900, .....	5	184,711	+5,303	.....
1901, .....	5	183,238	—1,473	+76,869
LOCOMOTIVES AND CARS BUILT AND REPAIRED.				
1896, .....	3	3,035,897	.....	.....
1897, .....	3	3,019,356	—16,541	.....
1898, .....	3	3,411,544	+392,188	.....
1899, .....	3	4,049,295	+637,751	.....
1900, .....	3	4,366,592	+317,297	.....
1901, .....	3	4,593,043	+226,451	+1,557,146
WROUGHT IRON PIPE AND TUBES.				
1896, .....	5	2,170,688	.....	.....
1897, .....	5	2,045,620	—125,068	.....
1898, .....	5	2,451,501	+405,881	.....

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Aggregate wages paid.	Increase (+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease (—) 1901 as compared with 1896.
WROUGHT IRON PIPE AND TUBES—Continued.				
1899, .....	5	\$4,566,297	+\$2,114,796	\$
1900, .....	5	2,575,403	—1,990,894	.....
1901, .....	5	3,301,349	+725,946	+1,130,661
CAST IRON PIPE.				
1896, .....	3	209,338	.....	.....
1897, .....	3	250,934	+41,596	.....
1898, .....	3	263,550	+12,616	.....
1899, .....	3	260,355	—3,195	.....
1900, .....	3	357,650	+97,295	.....
1901, .....	3	402,535	+44,885	+193,197
BRASS, COPPER AND BRONZE GOODS.				
1896, .....	19	496,402	.....	.....
1897, .....	19	482,428	—13,974	.....
1898, .....	19	575,651	+93,223	.....
1899, .....	19	661,456	+85,805	.....
1900, .....	19	742,750	+81,294	.....
1901, .....	19	845,903	+103,153	+349,501
IRON AND STEEL BRIDGES.				
1896, .....	7	590,081	.....	.....
1897, .....	7	564,817	—25,264	.....
1898, .....	7	647,664	+82,847	.....
1899, .....	7	722,759	+75,095	.....
1900, .....	7	1,235,666	+512,907	.....
1901, .....	7	1,176,736	—58,930	+586,655



## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
LOCOMOTIVES, STATIONARY ENGINES, ETC.				
1896, .....	9	\$3,137,295	\$	\$
1897, .....	9	3,032,837	—104,458	.....
1898, .....	9	4,559,167	+1,526,330	.....
1899, .....	9	5,764,855	+1,205,688	.....
1900, .....	9	7,274,385	+1,509,530	.....
1901, .....	9	8,314,869	+1,040,484	+5,177,574
ENGINES, BOILERS, ETC.				
1896, .....	10	1,003,538	.....	.....
1897, .....	10	840,896	—162,642	.....
1898, .....	10	996,882	+155,986	.....
1899, .....	10	1,185,494	+188,612	.....
1900, .....	10	1,309,636	+124,142	.....
1901, .....	10	1,425,785	+116,149	+422,247
CARS, SPRINGS, AXLES AND RAILWAY SUPPLIES.				
1896, .....	12	971,616	.....	.....
1897, .....	12	928,180	—43,436	.....
1898, .....	12	1,491,520	+563,340	.....
1899, .....	12	3,359,489	+1,867,969	.....
1900, .....	12	4,865,877	+1,506,388	.....
1901, .....	12	5,245,106	+379,229	+4,273,490
IRON VESSELS AND ENGINES.				
1896, .....	3	2,320,747	.....	.....
1897, .....	3	1,881,993	—438,754	.....
1898, .....	3	2,880,847	+998,854	.....

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
IRON VESSELS AND ENGINES —Continued.				
1899, .....	3	\$3,428,153	+\$547,306	\$
1900, .....	3	3,538,223	+110,070	.....
1901, .....	3	3,587,294	+49,071	+1,266,547
BOILERS, TANKS, STACKS, ETC.				
1896, .....	21	542,277	.....	.....
1897, .....	21	535,025	—7,252	.....
1898, .....	21	639,883	+104,858	.....
1899, .....	21	780,279	+140,396	.....
1900, .....	21	893,362	+113,083	.....
1901, .....	21	1,060,002	+166,640	+517,725
MACHINERY.				
1896, .....	21	1,955,967	.....	.....
1897, .....	21	1,970,570	+14,603	.....
1898, .....	21	2,402,335	+431,765	.....
1899, .....	21	3,122,970	+720,635	.....
1900, .....	21	3,292,239	+169,269	.....
1901, .....	21	3,497,092	+204,853	+1,541,125
FOUNDRIES AND MACHINE SHOPS.				
1896, .....	25	957,628	.....	.....
1897, .....	25	995,718	+38,090	.....
1898, .....	25	1,184,333	+188,615	.....
1899, .....	25	1,570,135	+385,802	.....
1900, .....	25	1,748,800	+178,665	.....
1901, .....	25	1,975,184	+226,384	+1,017,556

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
FILES, ETC.				
1896, .....	2	\$108,895	\$	\$
1897, .....	2	110,805	+1,910	.....
1898, .....	2	117,553	+6,748	.....
1899, .....	2	136,071	+18,518	.....
1900, .....	2	140,544	+4,473	.....
1901, .....	2	154,565	+14,021	+45,670
SAWS.				
1896, .....	3	25,745	.....	.....
1897, .....	3	21,557	—4,188	.....
1898, .....	3	22,939	+1,382	.....
1899, .....	3	24,100	+1,161	.....
1900, .....	3	32,108	+8,008	.....
1901, .....	3	33,271	+163	+7,526
PLUMBER SUPPLIES.				
1896, .....	3	418,864	.....	.....
1897, .....	3	377,194	—41,670	.....
1898, .....	3	432,969	+55,775	.....
1899, .....	3	502,827	+69,858	.....
1900, .....	3	504,686	+1,859	.....
1901, .....	3	527,899	+23,213	+109,035
ELECTRICAL SUPPLIES.				
1896, .....	4	1,276,087	.....	.....
1897, .....	4	1,184,647	—91,440	.....
1898, .....	4	1,929,920	+745,273	.....
1899, .....	4	2,856,814	+926,894	.....

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate wages paid.	Increase (+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
ELECTRICAL SUPPLIES—Continued.				
1900, .....	4	\$3,517,368	+\$660,554	\$
1901, .....	4	4,116,501	+599,133	+2,840,414
SHOVELS, SPADES, SCOOPS, ETC.				
1896, .....	8	217,581	.....	.....
1897, .....	8	202,067	—15,514	.....
1898, .....	8	236,593	+34,526	.....
1899, .....	8	291,969	+55,376	.....
1900, .....	8	230,909	—61,060	.....
1901, .....	8	289,145	+58,236	+71,564
SAFES AND VAULT DOORS.				
1896, .....	2	54,556	.....	.....
1897, .....	2	59,906	+5,350	.....
1898, .....	2	61,012	+1,106	.....
1899, .....	2	59,965	—1,047	.....
1900, .....	2	79,594	+19,629	.....
1901, .....	2	101,832	+22,238	+47,276
METAL AND METALLIC GOODS.				
1896, .....	3	58,892	.....	.....
1897, .....	3	65,704	+6,812	.....
1898, .....	3	74,084	+8,380	.....
1899, .....	3	106,846	+32,762	.....
1900, .....	3	116,057	+9,211	.....
1901, .....	3	117,163	+1,106	+58,271

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Aggregate wages paid.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
BUILDING AND STRUCTURAL IRON WORK.				
1896, .....	2	\$382,148	\$	\$
1897, .....	2	344,442	—37,706	.....
1898, .....	2	441,539	+97,097	.....
1899, .....	2	657,942	+216,403	.....
1900, .....	2	879,148	+221,206	.....
1901, .....	2	1,199,639	+320,491	+817,491
IRON CHAINS.				
1896, .....	5	91,526	.....	.....
1897, .....	5	96,671	+5,145	.....
1898, .....	5	120,291	+23,620	.....
1899, .....	5	140,403	+20,112	.....
1900, .....	5	124,543	—15,860	.....
1901, .....	5	142,794	+18,251	+51,268
IRON FENCES AND RAILINGS.				
1896, .....	7	37,512	.....	.....
1897, .....	7	48,923	+11,411	.....
1898, .....	7	57,197	+8,274	.....
1899, .....	7	69,864	+12,667	.....
1900, .....	7	88,304	+18,440	.....
1901, .....	7	103,420	+15,116	+65,908
AGRICULTURAL IMPLEMENTS.				
1896, .....	12	575,390	.....	.....
1897, .....	12	590,787	+15,397	.....
1898, .....	12	696,721	+105,934	.....



## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
AGRICULTURAL IMPLEMENTS —Continued.				
1899, .....	12	\$762,800	+\$66,079	\$
1900, .....	12	763,373	+573	.....
1901, .....	12	817,229	+53,856	+241,839
STEAM PUMPS.				
1896, .....	2	121,368	.....	.....
1897, .....	2	103,105	—18,263	.....
1898, .....	2	112,032	+8,927	.....
1899, .....	2	166,746	+54,714	.....
1900, .....	2	193,157	+26,411	.....
1901, .....	2	160,245	—32,912	+38,877
BICYCLES.				
1896, .....	3	117,134	.....	.....
1897, .....	3	155,444	+38,310	.....
1898, .....	3	154,962	—482	.....
1899, .....	3	127,384	—27,578	.....
1900, .....	3	97,992	—29,392	.....
1901, .....	3	55,269	—42,723	—61,865
PIANOS AND ORGANS.				
1896, .....	2	33,894	.....	.....
1897, .....	2	33,542	—352	.....
1898, .....	2	45,882	+12,340	.....
1899, .....	2	48,127	+2,245	.....
1900, .....	2	63,243	+15,116	.....
1901, .....	2	65,460	+2,217	+31,566

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	of establishments considered.	Aggregate wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Inc: case (+) or decrease (—) 1901 as compared with 1896.
TINWARE.				
1896, .....	5	\$107,539	\$	\$
1897, .....	5	106,907	—632	.....
1898, .....	5	103,119	—3,788	.....
1899, .....	5	118,410	+15,291	.....
1900, .....	5	134,105	+15,695	.....
1901, .....	5	170,087	+35,982	+62,548
PAPER MANUFACTORIES.				
1896, .....	8	580,874	.....	.....
1897, .....	8	588,144	+7,270	.....
1898, .....	8	591,810	+3,666	.....
1899, .....	8	688,257	+96,447	.....
1900, .....	8	768,824	+80,567	.....
1901, .....	8	738,509	—30,315	+157,635
WALL PAPER.				
1896, .....	4	116,068	.....	.....
1897, .....	4	124,043	+7,975	.....
1898, .....	4	139,400	+15,357	.....
1899, .....	4	143,741	+4,341	.....
1900, .....	4	158,741	+15,000	.....
1901, .....	4	157,042	—1,699	+40,974
CIGARS.				
1896, .....	46	1,813,388	.....	.....
1897, .....	46	2,044,125	+230,737	.....
1898, .....	46	2,235,665	+191,540	.....
1899, .....	46	2,424,293	+188,628	.....

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Aggregate wages paid.	Increase (+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease (—) 1901 as compared with 1896.
CIGARS—Continued.				
1900, .....	46	\$2,653,246	+\$228,953	\$
1901, .....	46	2,698,783	+45,537	+885,395
BOOK BINDING.				
1896, .....	3	64,957	.....	.....
1897, .....	3	66,378	+1,421	.....
1898, .....	3	75,293	+8,915	.....
1899, .....	3	86,318	+11,025	.....
1900, .....	3	98,563	+12,245	.....
1901, .....	3	103,717	+5,154	+38,760
CORDAGE, ROPE AND TWINE.				
1896, .....	5	618,977	.....	.....
1897, .....	5	683,523	+64,546	.....
1898, .....	5	674,993	—8,530	.....
1899, .....	5	792,522	+117,529	.....
1900, .....	5	742,246	—50,276	.....
1901, .....	5	785,781	+43,535	+166,804
PAPER, PAPER BOXES, ENVEL- OPES, ETC.				
1896, .....	27	494,654	.....	.....
1897, .....	27	511,220	+16,566	.....
1898, .....	27	567,743	+56,523	.....
1899, .....	27	678,205	+110,462	.....
1900, .....	27	604,789	—73,416	.....
1901, .....	27	597,941	—6,848	+103,287
POTTERY.				
1896, .....	2	72,562	.....	.....
1897, .....	2	68,011	—4,551	.....

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
POTTERY—Continued.				
1898, .....	2	\$73,799	+\$5,788	\$
1899, .....	2	78,658	+4,859	.....
1900, .....	2	78,307	—351	.....
1901, .....	2	83,136	+4,829	+10,574
PAVING BRICK.				
1896, .....	7	142,710	.....	.....
1897, .....	7	144,002	+1,292	.....
1898, .....	7	148,144	+4,142	.....
1899, .....	7	176,133	+27,989	.....
1900, .....	7	237,666	+61,533	.....
1901, .....	7	206,868	—30,798	+64,158
BUILDING BRICK.				
1896, .....	35	662,481	.....	.....
1897, .....	35	657,846	—4,635	.....
1898, .....	35	653,415	—4,431	.....
1899, .....	35	692,770	+39,355	.....
1900, .....	35	681,720	—11,050	.....
1901, .....	35	733,827	+52,107	+71,346
FIRE BRICK.				
1896, .....	18	727,162	.....	.....
1897, .....	18	719,308	—7,854	.....
1898, .....	18	843,336	+124,028	.....
1899, .....	18	1,133,377	+290,041	.....
1900, .....	18	1,602,426	+469,049	.....
1901, .....	18	1,622,430	+20,004	+895,268

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
SLATE ROOFING, ETC., TONNAGE.				
1896, .....	6	\$251,993	\$	\$
1897, .....	6	270,398	+18,405	.....
1898, .....	6	250,225	—20,173	.....
1899, .....	6	219,276	—30,949	.....
1900, .....	6	280,065	+60,789	.....
1901, .....	6	362,028	+81,963	+10,035
SLATE ROOFING, ETC., SQUARES.				
1896, .....	14	397,384	.....	.....
1897, .....	14	434,572	+37,188	.....
1898, .....	14	472,437	+37,865	.....
1899, .....	14	544,953	+72,516	.....
1900, .....	14	565,623	+20,670	.....
1901, .....	14	615,681	+50,058	+218,297
WINDOW GLASS, BOTTLES AND TABLE GOODS.				
1896, .....	22	2,690,298	.....	.....
1897, .....	22	2,991,339	+301,041	.....
1898, .....	22	3,412,343	+421,004	.....
1899, .....	22	4,043,313	+630,970	.....
1900, .....	22	4,570,920	+527,607	.....
1901, .....	22	3,971,494	—599,426	+1,281,196
GLAZED AND CHROME KID.				
1896, .....	7	962,342	.....	.....
1897, .....	7	1,285,138	+322,796	.....



## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Aggregate wages paid.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
GLAZED AND CHROME KID— Continued.				
1898, .....	7	\$1,472,762	+\$187,624	\$
1899, .....	7	1,907,913	+435,151	.....
1900, .....	7	1,759,101	—148,812	.....
1901, .....	7	2,111,284	+352,183	+1,148,942
MEN'S, WOMEN'S, MISSES' AND CHILDREN'S SHOES.				
1896, .....	15	1,173,935	.....	.....
1897, .....	15	1,250,818	+76,883	.....
1898, .....	15	1,325,230	+7,4412	.....
1899, .....	15	1,335,825	+10,595	.....
1900, .....	15	1,299,922	—35,903	.....
1901, .....	15	1,347,012	+47,090	+173,077
SUSPENDERS.				
1896, .....	2	30,936	.....	.....
1897, .....	2	33,936	+3,000	.....
1898, .....	2	41,000	+7,064	.....
1899, .....	2	61,150	+20,150	.....
1900, .....	2	76,250	+15,100	.....
1901, .....	2	61,400	—14,850	+30,464
HATS AND CAPS.				
1896, .....	3	121,160	.....	.....
1897, .....	3	179,336	+58,176	.....
1898, .....	3	176,383	—2,953	.....
1899, .....	3	191,909	+15,526	.....

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease(—) 1901 as compared with 1896.
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## HATS AND CAPS—Continued.

1900, .....	3	\$211,921	+\$20,012	\$
1901, .....	3	244,900	+32,978	+123,740

## FUR AND FELT HATS.

1896, .....	4	385,170	.....	.....
1897, .....	4	514,651	+129,481	.....
1898, .....	4	595,085	+80,834	.....
1899, .....	4	665,296	+70,211	.....
1900, .....	4	808,461	+143,165	.....
1901, .....	4	980,610	+172,149	+595,440

## WOOL HATS.

1896, .....	7	125,792	.....	.....
1897, .....	7	143,074	+17,282	.....
1898, .....	7	140,773	—2,301	.....
1899, .....	7	163,164	+22,391	.....
1900, .....	7	217,479	+54,315	.....
1901, .....	7	187,791	—29,688	+61,999

## UMBRELLAS AND PARASOLS.

1896, .....	4	136,441	.....	.....
1897, .....	4	170,504	+34,063	.....
1898, .....	4	135,627	—34,897	.....
1899, .....	4	144,650	+9,023	.....
1900, .....	4	135,101	—9,549	.....
1901, .....	4	144,419	+9,318	+7,978

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Aggregate wages paid.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
DRESS TRIMMINGS, BRAIDS, ETC.				
1896, .....	8	\$299,043	\$	\$
1897, .....	8	380,240	+81,197	.....
1898, .....	8	413,277	+33,037	.....
1899, .....	8	479,688	+66,411	.....
1900, .....	8	533,502	+53,814	.....
1901, .....	8	494,333	—39,169	+195,290
SHIRTS AND SHIRT WAISTS.				
1896, .....	9	527,371	.....	.....
1897, .....	9	494,680	—32,691	.....
1898, .....	9	539,135	+44,455	.....
1899, .....	9	687,095	+147,960	.....
1900, .....	9	733,667	+46,572	.....
1901, .....	9	774,447	+40,780	+247,076
NECKWEAR.				
1896, .....	3	72,910	.....	.....
1897, .....	3	62,988	—9,922	.....
1898, .....	3	68,975	+5,987	.....
1899, .....	3	73,883	+4,908	.....
1900, .....	3	69,247	—4,636	.....
1901, .....	3	57,388	—11,859	—15,522
COTTON AND WOOLEN CLOTHS.				
1896, .....	24	1,418,449	.....	.....
1897, .....	24	1,643,929	+225,480	.....
1898, .....	24	1,646,482	+2,553	.....

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Aggregate wages paid.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
COTTON AND WOOLEN CLOTHS —Continued.				
1899, .....	24	\$1,934,224	+\$287,742	\$
1900, .....	24	1,994,236	+60,012	.....
1901, .....	24	1,878,847	—115,389	+460,398
CARPETS.				
1896, .....	17	784,416	.....	.....
1897, .....	17	986,918	+202,502	.....
1898, .....	17	998,647	+11,729	.....
1899, .....	17	1,177,796	+179,149	.....
1900, .....	17	1,162,693	—15,103	.....
1901, .....	17	1,254,800	+92,107	+470,384
COTTON GOODS.				
1896, .....	16	794,137	.....	.....
1897, .....	16	896,055	+101,918	.....
1898, .....	16	965,037	+68,982	.....
1899, .....	16	1,103,648	+138,611	.....
1900, .....	16	1,111,846	+8,198	.....
1901, .....	16	1,045,654	—66,192	+251,517
WOOLEN AND WORSTED CAS- SIMERES.				
1896, .....	11	419,961	.....	.....
1897, .....	11	523,351	+103,390	.....
1898, .....	11	565,281	+41,930	.....
1899, .....	11	673,336	+108,055	.....
1900, .....	11	691,354	+18,018	.....
1901, .....	11	694,124	+2,770	+274,163

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Aggregate wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
WOOLEN AND WORSTED FABRICS.				
1896, .....	16	\$788,163	\$	\$
1897, .....	16	1,045,039	+256,876	.....
1898, .....	16	1,066,441	+21,402	.....
1899, .....	16	1,217,967	+151,526	.....
1900, .....	16	1,356,306	+138,339	.....
1901, .....	16	1,138,513	—217,793	+350,350
WOOLEN AND WORSTED YARNS.				
1896, .....	12	411,043	.....	.....
1897, .....	12	491,309	+80,266	.....
1898, .....	12	453,110	—38,199	.....
1899, .....	12	534,400	+81,290	.....
1900, .....	12	531,039	—3,361	.....
1901, .....	12	578,871	+47,832	+167,828
RUGS, YARNS, ETC.				
1896, .....	5	1,011,165	.....	.....
1897, .....	5	983,588	—27,577	.....
1898, .....	5	996,501	+12,913	.....
1899, .....	5	1,172,575	+176,074	.....
1900, .....	5	1,173,598	+1,023	.....
1901, .....	5	1,179,748	+6,150	+168,583
CARPET YARNS.				
1896, .....	11	189,053	.....	.....
1897, .....	11	233,191	+44,138	.....
1898, .....	11	192,218	—40,973	.....



## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Aggregate wages paid.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
CARPET YARNS—Continued.				
1899, .....	11	\$242,414	+\$50,196	\$
1900, .....	11	244,411	+1,997	.....
1901, .....	11	265,572	+21,161	+76,519
COTTON YARNS.				
1896, .....	7	188,970	.....	.....
1897, .....	7	201,809	+12,839	.....
1898, .....	7	239,109	+37,300	.....
1899, .....	7	244,291	+5,182	.....
1900, .....	7	261,937	+17,646	.....
1901, .....	7	229,243	—32,694	+40,273
WORSTED, WOOLEN AND COT- TON YARNS.				
1896, .....	10	462,651	.....	.....
1897, .....	10	562,424	+99,773	.....
1898, .....	10	541,000	—21,424	.....
1899, .....	10	655,368	+114,368	.....
1900, .....	10	653,421	—1,947	.....
1901, .....	10	616,151	—37,270	+153,500
WOOLEN BLANKETS, FLAN- NELS, ETC.				
1896, .....	5	257,057	.....	.....
1897, .....	5	264,403	+7,346	.....
1898, .....	5	350,302	+85,899	.....
1899, .....	5	322,275	—28,027	.....
1900, .....	5	323,711	+1,436	.....
1901, .....	5	299,492	—24,219	+42,435

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
LACE GOODS.				
1896, .....	3	\$193,765	\$	\$
1897, .....	3	223,436	+29,671	.....
1898, .....	3	269,910	+46,474	.....
1899, .....	3	313,641	+43,731	.....
1900, .....	3	372,460	+58,819	.....
1901, .....	3	382,726	+10,266	+188,961
CHENILLE GOODS.				
1896, .....	3	138,438	.....	.....
1897, .....	3	169,224	+30,786	.....
1898, .....	3	171,041	+1,817	.....
1899, .....	3	203,598	+32,557	.....
1900, .....	3	251,665	+48,067	.....
1901, .....	3	270,854	+19,189	+132,416
UPHOLSTERY GOODS.				
1896, .....	10	674,424	.....	.....
1897, .....	10	765,506	+91,082	.....
1898, .....	10	847,374	+81,868	.....
1899, .....	10	921,752	+74,378	.....
1900, .....	10	842,390	—79,362	.....
1901, .....	10	914,677	+72,287	+240,253
KNIT GOODS, UNDERWEAR.				
1896, .....	13	611,923	.....	.....
1897, .....	13	674,072	+62,149	.....
1898, .....	13	686,552	+12,480	.....

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Aggregate wages paid.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
KNIT GOODS, UNDERWEAR— Continued.				
1899, .....	13	\$790,868	+\$104,316	\$
1900, .....	13	811,968	+21,100	.....
1901, .....	13	766,663	—45,305	+154,740
HOSIERY.				
1896, .....	31	1,130,215	.....	.....
1897, .....	31	1,377,150	+246,935	.....
1898, .....	31	1,483,567	+106,417	.....
1899, .....	31	1,610,552	+126,985	.....
1900, .....	31	1,796,880	+186,328	.....
1901, .....	31	1,874,579	+77,699	+744,364
SILK—BROAD GOODS, THROWN SILK, YARNS, ETC.				
1896, .....	6	579,144	.....	.....
1897, .....	6	796,504	+217,360	.....
1898, .....	6	907,095	+110,591	.....
1899, .....	6	963,224	+56,129	.....
1900, .....	6	896,322	—66,902	.....
1901, .....	6	886,216	—10,106	+307,072
SILK—BROAD GOODS AND RIB- BONS.				
1896, .....	2	325,323	.....	.....
1897, .....	2	477,694	+152,371	.....
1898, .....	2	516,061	+38,367	.....
1899, .....	2	522,612	+6,551	.....
1900, .....	2	465,000	—57,612	.....
1901, .....	2	542,822	+77,822	+217,499

## AGGREGATE WAGES PAID—Continued.

COMPARISON OF AGGREGATE AMOUNT OF WAGES PAID—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Aggregate wages paid.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
SILK—RIBBONS.				
1896, .....	4	\$125,802	\$	\$
1897, .....	4	187,491	+61,689	.....
1898, .....	4	213,252	+25,761	.....
1899, .....	4	217,812	+4,560	.....
1900, .....	4	221,341	+3,529	.....
1901, .....	4	313,691	+92,350	+187,889

## VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

NOTE.—In this table the value of average annual product per employee by the same establishments for the years 1896, 1897, 1898, 1899, 1900 and 1901 is presented, with the relative increase or decrease, together with the increase or decrease 1901 over 1896. Eighty-eight industries, representing 801 establishments, are considered.

Character of Industry and Years.	Number of es- tablsh- ments consid- ered.	Average annual product per employee.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
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## STEEL CASTINGS.

1896, .....	7	\$1,472 49	\$	\$
1897, .....	7	1,302 45	—170 04	.....
1898, .....	7	1,539 94	+237 49	.....
1899, .....	7	1,676 21	+136 27	.....
1900, .....	7	1,822 00	+145 79	.....
1901, .....	7	1,720 23	—101 77	+247 74

STEEL BILLETS, SLABS,  
BLOOMS, ETC.

1896, .....	4	5,135 93	.....	.....
1897, .....	4	8,224 72	+3,088 79	.....
1898, .....	4	6,954 01	—1,270 71	.....
1899, .....	4	10,450 85	+3,496 84	.....
1900, .....	4	8,709 49	—1,741 36	.....
1901, .....	4	9,789 41	+1,079 92	+4,653 48

## TOOL STEEL.

1896, .....	3	2,711 26	.....	.....
1897, .....	3	1,698 30	—1,012 96	.....
1898, .....	3	2,079 74	+381 44	.....



VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments considered.	Average annual product per employee.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
TOOL STEEL—Continued.				
1899, .....	3	\$2,294 16	+\$214 42	\$
1900, .....	3	3,305 61	+1,011 45	.....
1901, .....	3	3,976 63	+671 02	+1,265 37
IRON AND STEEL FORGINGS.				
1896, .....	7	1,047 89	.....	.....
1897, .....	7	1,292 28	+244 39	.....
1898, .....	7	1,456 05	+163 77	.....
1899, .....	7	1,985 45	+529 40	.....
1900, .....	7	1,942 38	—43 07	.....
1901, .....	7	1,565 97	—356 41	+518 08
IRON SPECIALTIES.				
1896, .....	2	2,107 19	.....	.....
1897, .....	2	2,648 16	+540 97	.....
1898, .....	2	2,231 63	—416 53	.....
1899, .....	2	2,594 20	+362 57	.....
1900, .....	2	2,136 39	—457 81	.....
1901, .....	2	1,995 28	—141 11	—111 91
MALLEABLE IRON.				
1896, .....	4	1,227 37	.....	.....
1897, .....	4	1,159 02	—68 35	.....
1898, .....	4	1,395 31	+236 29	.....
1899, .....	4	1,533 17	+137 86	.....
1900, .....	4	1,487 38	—45 79	.....
1901, .....	4	1,130 57	—356 81	—96 80

VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average annual product per employee.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
BOLTS, NUTS, ETC.				
1896, .....	8	\$1,347 46	\$	\$
1897, .....	8	1,265 00	—82 46	.....
1898, .....	8	1,410 00	+145 00	.....
1899, .....	8	1,944 63	+534 63	.....
1900, .....	8	2,147 79	+203 16	.....
1901, .....	8	1,599 49	—548 30	+252 03
WIRE NAILS AND RIVETS.				
1896, .....	4	1,853 21	.....	.....
1897, .....	4	2,321 18	+467 97	.....
1898, .....	4	1,661 58	—659 60	.....
1899, .....	4	2,488 14	+826 56	.....
1900, .....	4	1,659 10	—829 04	.....
1901, .....	4	3,120 06	+1,460 96	+1,266 85
TACKS AND SMALL NAILS.				
1896, .....	4	980 92	.....	.....
1897, .....	4	939 58	—41 34	.....
1898, .....	4	1,384 73	+445 15	.....
1899, .....	4	1,219 27	—165 46	.....
1900, .....	4	1,214 83	—4 44	.....
1901, .....	4	1,412 17	+197 34	+431 25
WIRE.				
1896, .....	5	2,352 20	.....	.....
1897, .....	5	2,118 09	—234 11	.....
1898, .....	5	2,190 63	+72 54	.....

VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average annual product per employee.	Increase(+) or decrease (-) as com- pared with the preced- ing year.	Increase (+) or de- crease(-) 1901 as compared with 1896.
WIRE—Continued.				
1899, .....	5	\$1,914 47	—\$276 16	\$
1900, .....	5	1,781 85	—132 62	.....
1901, .....	5	1,781 28	—57	—570 92
WIRE ROPE.				
1896, .....	2	3,892 43	.....	.....
1897, .....	2	3,591 52	—300 91	.....
1898, .....	2	3,449 82	—141 70	.....
1899, .....	2	4,185 85	+736 03	.....
1900, .....	2	4,302 00	+116 15	.....
1901, .....	2	4,310 23	+8 23	+417 80
WIRE GOODS.				
1896, .....	5	1,118 66	.....	.....
1897, .....	5	1,206 10	+87 44	.....
1898, .....	5	1,419 16	+213 06	.....
1899, .....	5	1,541 11	+121 95	.....
1900, .....	5	1,647 49	+106 38	.....
1901, .....	5	1,555 36	—92 13	+436 70
WAGON AND CARRIAGE AXLES AND SPRINGS.				
1896, .....	6	1,542 44	.....	.....
1897, .....	6	1,571 63	+29 19	.....
1898, .....	6	1,602 49	+30 86	.....
1899, .....	6	1,851 65	+249 16	.....
1900, .....	6	1,559 49	—292 16	.....
1901, .....	6	1,403 96	—155 53	—138 48

# VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE— Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average annual product per employee.	Increase(+) or decrease (—) as compared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
SCALES, ETC.				
1896, .....	4	\$2,067 18	\$	\$
1897, .....	4	2,047 25	—19 93	.....
1898, .....	4	1,965 40	—81 85	.....
1899, .....	4	2,179 18	+213 78	.....
1900, .....	4	2,118 85	—60 33	.....
1901, .....	4	2,189 00	+70 15	+121 82
STOVES, RANGES, HEATERS, ETC.				
1896, .....	37	1,192 84	.....	.....
1897, .....	37	1,179 07	—13 77	.....
1898, .....	37	1,165 53	—13 54	.....
1899, .....	37	1,369 98	+204 45	.....
1900, .....	37	1,426 51	+56 53	.....
1901, .....	37	1,337 94	—88 57	+145 10
BATH BOILERS, TANKS, ETC.				
1896, .....	2	2,353 31	.....	.....
1897, .....	2	2,274 97	—78 34	.....
1898, .....	2	1,940 69	—334 28	.....
1899, .....	2	1,993 13	+52 44	.....
1900, .....	2	2,174 71	+181 58	.....
1901, .....	2	2,180 86	+6 15	—172 45
HARDWARE SPECIALTIES.				
1896, .....	14	949 63	.....	.....
1897, .....	14	1,016 45	+66 82	.....
1898, .....	14	983 62	—32 83	.....

VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average annual product per employe.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
HARDWARE SPECIALTIES— Continued.				
1899, .....	14	\$1,161 16	+\$177 54	\$
1900, .....	14	1,059 47	—101 69	.....
1901, .....	14	1,154 92	+95 45	+205 29
EDGE TOOLS.				
1896, .....	12	1,324 04	.....	.....
1897, .....	12	945 38	—378 66	.....
1898, .....	12	1,217 76	+272 38	.....
1899, .....	12	1,368 65	+150 89	.....
1900, .....	12	1,502 71	+134 06	.....
1901, .....	12	1,357 20	—145 51	+33 16
WRENCHES, PICKS, ETC.				
1896, .....	5	1,463 93	.....	.....
1897, .....	5	1,576 94	+113 01	.....
1898, .....	5	1,816 39	+239 45	.....
1899, .....	5	2,010 26	+193 87	.....
1900, .....	5	1,789 08	—221 18	.....
1901, .....	5	1,997 45	+208 37	+533 52
LOCOMOTIVES AND CARS BUILT AND REPAIRED.				
1896, .....	3	1,116 72	.....	.....
1897, .....	3	1,138 02	+21 30	.....
1898, .....	3	1,341 22	+203 20	.....
1899, .....	3	1,505 69	+164 47	.....
1900, .....	3	1,559 32	+53 63	.....
1901, .....	3	1,550 10	—9 22	+433 38



VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average annual product per employe.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
WROUGHT IRON PIPE AND TUBES.				
1896, .....	5	\$2,236 56	\$	\$
1897, .....	5	2,219 49	—17 07	.....
1898, .....	5	2,556 27	+336 78	.....
1899, .....	5	2,988 46	+432 19	.....
1900, .....	5	3,937 82	+949 36	.....
1901, .....	5	4,165 12	+227 30	+1,928 56
CAST IRON PIPE.				
1896, .....	3	1,701 48	.....	.....
1897, .....	3	1,925 59	+224 11	.....
1898, .....	3	1,828 79	—96 80	.....
1899, .....	3	1,825 41	—3 38	.....
1900, .....	3	2,189 73	+364 32	.....
1901, .....	3	2,383 22	+193 49	+681 74
BRASS, COPPER AND BRONZE GOODS.				
1896, .....	19	1,833 65	.....	.....
1897, .....	19	1,688 70	—144 95	.....
1898, .....	19	1,821 01	+132 31	.....
1899, .....	19	2,355 57	+534 56	.....
1900, .....	19	2,204 33	—151 24	.....
1901, .....	19	2,312 24	+107 91	+478 59
IRON AND STEEL BRIDGES.				
1896, .....	7	2,933 39	.....	.....
1897, .....	7	2,646 87	—286 52	.....

# VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE— Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average annual product per employee.	Increase(+) or decrease (-) as com- pared with the preced- ing year.	Increase (+) or de- crease(-) 1901 as compared with 1896.
IRON AND STEEL BRIDGES— Continued.				
1898, .....	7	\$2,612 24	—\$34 63	\$
1899, .....	7	3,032 80	+420 56	.....
1900, .....	7	3,873 45	+840 65	.....
1901, .....	7	3,098 51	—774 94	+165 12
LOCOMOTIVES, STATIONERY ENGINES, ETC.				
1896, .....	9	1,573 66	.....	.....
1897, .....	9	1,509 67	—63 99	.....
1898, .....	9	1,614 48	+104 81	.....
1899, .....	9	1,788 20	+173 72	.....
1900, .....	9	2,049 49	+261 29	.....
1901, .....	9	2,037 49	—12 00	+463 83
ENGINES, BOILERS, ETC.				
1896, .....	10	1,680 91	.....	.....
1897, .....	10	1,573 15	—107 76	.....
1898, .....	10	1,622 24	+49 09	.....
1899, .....	10	2,114 72	+492 48	.....
1900, .....	10	2,144 41	+29 69	.....
1901, .....	10	2,013 73	—130 68	+332 82
CARS, SPRINGS, AXLES AND RAILWAY SUPPLIES.				
1896, .....	12	2,055 12	.....	.....
1897, .....	12	1,890 35	—164 77	.....
1898, .....	12	2,628 62	+738 27	.....

VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average annual product per employee.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
CARS, SPRINGS, AXLES AND RAILWAY SUPPLIES—Continued.				
1899, .....	12	\$2,924 26	+\$295 64	\$
1900, .....	12	3,310 84	+386 58	.....
1901, .....	12	2,945 35	—365 49	+890 23
IRON VESSELS AND ENGINES.				
1896, .....	3	1,234 24	.....	.....
1897, .....	3	1,331 14	+96 90	.....
1898, .....	3	1,232 34	—98 80	.....
1899, .....	3	1,481 22	+248 88	.....
1900, .....	3	1,806 65	+325 43	.....
1901, .....	3	1,694 24	—112 41	+460 00
BOILERS, TANKS, STACKS, ETC.				
1896, .....	21	1,680 63	.....	.....
1897, .....	21	1,688 25	+7 62	.....
1898, .....	21	1,771 47	+83 22	.....
1899, .....	21	2,123 40	+351 93	.....
1900, .....	21	2,113 32	—10 08	.....
1901, .....	21	2,228 71	—115 39	+548 08
MACHINERY.				
1896, .....	21	1,450 69	.....	.....
1897, .....	21	1,414 95	—35 74	.....
1898, .....	21	1,466 16	+51 21	.....
1899, .....	21	1,550 68	+84 52	.....
1900, .....	21	1,650 48	+99 80	.....
1901, .....	21	1,654 59	+4 11	+203 90

# VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE— Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average annual product per employee.	Increase(+) or decrease (-) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
FOUNDRIES AND MACHINE SHOPS.				
1896, .....	25	\$1,242 69	\$	\$
1897, .....	25	1,411 48	+168 79	.....
1898, .....	25	1,459 58	+48 10	.....
1899, .....	25	1,675 67	+216 09	.....
1900, .....	25	1,831 19	+155 52	.....
1901, .....	25	1,632 12	—199 07	+389 43
FILES, ETC.				
1896, .....	2	970 46	.....	.....
1897, .....	2	952 40	—18 06	.....
1898, .....	2	1,085 27	+132 87	.....
1899, .....	2	1,159 81	+74 54	.....
1900, .....	2	1,131 23	—28 58	.....
1901, .....	2	1,420 09	+288 86	+449 63
SAWS.				
1896, .....	3	1,574 75	.....	.....
1897, .....	3	1,428 75	—146 00	.....
1898, .....	3	1,624 21	+195 46	.....
1899, .....	3	1,779 23	+155 02	.....
1900, .....	3	2,359 02	+579 79	.....
1901, .....	3	2,253 09	—105 93	+678 34
PLUMBER SUPPLIES.				
1896, .....	3	1,122 92	.....	.....
1897, .....	3	1,044 52	—78 40	.....

VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average annual product per employe.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
PLUMBER SUPPLIES—Continued.				
1898, .....	3	\$1,136 85	+\$92 33	\$
1899, .....	3	1,373 48	+236 63	.....
1900, .....	3	1,241 87	—131 61	.....
1901, .....	3	1,318 19	+76 32	+195 27
ELECTRICAL SUPPLIES.				
1896, .....	4	1,445 20	.....	.....
1897, .....	4	1,594 02	+148 82	.....
1898, .....	4	1,949 52	+355 50	.....
1899, .....	4	2,211 11	+261 59	.....
1900, .....	4	2,487 59	+276 48	.....
1901, .....	4	2,259 79	—227 80	+814 59
SHOVELS, SPADES, SCOOPS, ETC.				
1896, .....	8	1,492 80	.....	.....
1897, .....	8	1,571 52	+78 72	.....
1898, .....	8	1,888 85	+317 33	.....
1899, .....	8	2,653 55	+764 70	.....
1900, .....	8	2,133 03	—520 52	.....
1901, .....	8	2,723 76	+590 73	+1,230 96
SAFES AND VAULT DOORS.				
1896, .....	2	1,183 95	.....	.....
1897, .....	2	1,259 81	+75 86	.....
1898, .....	2	1,265 17	+5 36	.....
1899, .....	2	1,306 44	+41 27	.....



VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average annual product per employe.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease(—) 1901 as compared with 1896.
SAFES AND VAULT DOORS— Continued.				
1900, .....	2	\$1,432 10	+\$125 66	\$
1901, .....	2	1,489 00	+56 90	+305 05
METAL AND METALLIC GOODS.				
1896, .....	3	834 99	.....	.....
1897, .....	3	889 37	+54 38	.....
1898, .....	3	922 20	+32 83	.....
1899, .....	3	1,118 88	+196 68	.....
1900, .....	3	1,127 85	+8 97	.....
1901, .....	3	1,368 75	+240 90	+533 76
BUILDING AND STRUCTURAL IRON WORK.				
1896, .....	2	1,589 30	.....	.....
1897, .....	2	1,887 14	+297 84	.....
1898, .....	2	2,446 66	+559 52	.....
1899, .....	2	1,739 98	—706 68	.....
1900, .....	2	2,725 17	+985 19	.....
1901, .....	2	2,801 16	+75 99	+1,211 86
IRON CHAINS.				
1896, .....	5	1,433 15	.....	.....
1897, .....	5	1,456 06	+22 91	.....
1898, .....	5	1,521 58	+65 52	.....
1899, .....	5	1,953 54	+431 96	.....
1900, .....	5	1,925 95	—27 59	.....
1901, .....	5	1,948 59	+22 64	+515 44

# VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE— Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average annual product per employee.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
IRON FENCES AND RAILINGS.				
1896, .....	7	\$1,512 67	\$	\$
1897, .....	7	1,456 41	—56 26	.....
1898, .....	7	1,484 60	+28 19	.....
1899, .....	7	1,680 63	+196 03	.....
1900, .....	7	1,557 42	—123 21	.....
1901, .....	7	1,722 80	+165 38	+210 13
AGRICULTURAL IMPLEMENTS.				
1896, .....	12	1,738 62	.....	.....
1897, .....	12	1,841 49	+102 87	.....
1898, .....	12	1,895 00	+53 51	.....
1899, .....	12	1,997 39	+102 39	.....
1900, .....	12	2,001 46	+4 07	.....
1901, .....	12	2,141 37	+139 91	+402 75
STEAM PUMPS.				
1896, .....	2	2,183 31	.....	.....
1897, .....	2	1,782 06	—401 25	.....
1898, .....	2	2,076 23	+294 17	.....
1899, .....	2	1,829 84	—246 39	.....
1900, .....	2	2,406 76	+576 92	.....
1901, .....	2	1,781 25	—625 51	—402 06
BICYCLES.				
1896, .....	3	2,729 23	.....	.....
1897, .....	3	2,532 31	—196 92	.....
1898, .....	3	1,942 79	—589 52	.....

# VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYE— Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments considered.	Average annual product per employee.	Increase (+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease (—) 1901 as compared with 1896.
BICYCLES—Continued.				
1899, .....	3	\$1,763 87	—\$178 92	\$
1900, .....	3	1,474 09	—289 78	.....
1901, .....	3	2,033 17	+559 08	—696 06
PIANOS AND ORGANS.				
1896, .....	2	1,179 09	.....	.....
1897, .....	2	1,241 54	+62 45	.....
1898, .....	2	1,441 80	+200 26	.....
1899, .....	2	1,701 70	+259 90	.....
1900, .....	2	1,408 36	—293 34	.....
1901, .....	2	1,318 35	—90 01	+139 26
TINWARE.				
1896, .....	5	1,679 57	.....	.....
1897, .....	5	1,698 18	+18 61	.....
1898, .....	5	1,687 77	—10 41	.....
1899, .....	5	1,983 55	+295 78	.....
1900, .....	5	1,691 32	—292 23	.....
1901, .....	5	1,386 64	—304 93	—292 93
PAPER MANUFACTORIES.				
1896, .....	8	2,216 30	.....	.....
1897, .....	8	2,245 85	+29 55	.....
1898, .....	8	2,235 71	—10 14	.....
1899, .....	8	2,530 74	+295 03	.....
1900, .....	8	2,684 62	+153 88	.....
1901, .....	8	2,647 82	—36 80	+431 52

# VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYE— Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average annual product per employe.	Increase (+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
WALL PAPER.				
1896, .....	4	\$2,333 73	\$	\$
1897, .....	4	2,593 18	+259 45	.....
1898, .....	4	2,871 61	+278 43	.....
1899, .....	4	3,130 15	+258 54	.....
1900, .....	4	3,209 41	+79 26	.....
1901, .....	4	2,820 39	—389 02	+486 66
CIGARS.				
1896, .....	46	1,088 40	.....	.....
1897, .....	46	1,109 50	+21 10	.....
1898, .....	46	1,136 72	+27 22	.....
1899, .....	46	1,164 72	+28 00	.....
1900, .....	46	1,195 51	+30 79	.....
1901, .....	46	1,166 80	—28 71	+78 40
BOOK BINDING.				
1896, .....	3	1,216 35	.....	.....
1897, .....	3	1,185 20	—31 15	.....
1898, .....	3	1,157 48	—27 72	.....
1899, .....	3	1,184 81	+27 33	.....
1900, .....	3	1,156 70	—28 11	.....
1901, .....	3	1,258 71	+102 01	+42 36
CORDAGE ROPE AND TWINE.				
1896, .....	5	2,324 81	.....	.....
1897, .....	5	2,224 31	—100 50	.....
1898, .....	5	2,366 24	+141 93	.....

# VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE— Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average annual product per employee.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
CORDAGE, ROPE AND TWINE— Continued.				
1899, .....	5	\$2,838 46	+\$472 22	\$
1900, .....	5	3,068 67	+230 21	.....
1901, .....	5	3,246 03	+177 36	+921 22
PAPER, PAPER BOXES, EN- VELOPES, ETC.				
1896, .....	27	1,100 68	.....	.....
1897, .....	27	1,072 25	—28 43	.....
1898, .....	27	923 21	—149 04	.....
1899, .....	27	1,074 63	+151 42	.....
1900, .....	27	1,125 74	+51 11	.....
1901, .....	27	1,166 29	+40 55	+65 61
POTTERY.				
1896, .....	2	1,415 97	.....	.....
1897, .....	2	1,325 29	—90 68	.....
1898, .....	2	1,479 25	+153 96	.....
1899, .....	2	1,507 74	+28 49	.....
1900, .....	2	1,349 54	—158 20	.....
1901, .....	2	1,439 00	+89 46	+23 03
PAVING BRICK.				
1896, .....	7	762 19	.....	.....
1897, .....	7	811 70	+49 51	.....
1898, .....	7	821 91	+10 21	.....
1899, .....	7	788 38	—33 53	.....
1900, .....	7	1,029 48	+241 10	.....
1901, .....	7	746 49	—282 99	—15 70



VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments considered.	Average annual product per employee.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease(—) 1901 as compared with 1896.
BUILDING BRICK.				
1896, .....	35	\$809 53	\$	\$
1897, .....	35	833 99	+24 46	.....
1898, .....	35	783 29	—50 70	.....
1899, .....	35	884 97	+101 68	.....
1900, .....	35	862 76	—22 21	.....
1901, .....	35	881 39	+18 63	+71 86
FIRE BRICK.				
1896, .....	18	877 90	.....	.....
1897, .....	18	814 35	—63 55	.....
1898, .....	18	823 12	+8 77	.....
1899, .....	18	843 70	+20 58	.....
1900, .....	18	931 33	+87 63	.....
1901, .....	18	850 71	—80 62	—27 19
SLATE ROOFING, ETC., TON- NAGE.				
1896, .....	6	470 33	.....	.....
1897, .....	6	621 59	+151 26	.....
1898, .....	6	705 64	+84 05	.....
1899, .....	6	703 48	—2 16	.....
1900, .....	6	681 17	—22 31	.....
1901, .....	6	803 75	+122 58	+333 42
SLATE ROOFING, ETC., SQUARES.				
1896, .....	14	470 79	.....	.....
1897, .....	14	536 52	+65 73	.....

VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average annual product per employee.	Increase (+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease (—) 1901 as compared with 1896.
SLATE ROOFING, ETC., SQUARES—Continued.				
1898, .....	14	\$403 72	—\$132 80	\$
1899, .....	14	599 62	+195 90	.....
1900, .....	14	569 70	—29 92	.....
1901, .....	14	612 95	+43 25	+142 16
WINDOW GLASS, BOTTLES AND TABLE GOODS.				
1896, .....	22	842 63	.....	.....
1897, .....	22	935 92	+93 29	.....
1898, .....	22	997 18	+61 26	.....
1899, .....	22	1,068 58	+71 40	.....
1900, .....	22	1,017 82	—50 76	.....
1901, .....	22	989 05	—28 77	+146 42
GLAZED AND CHROME KID.				
1896, .....	7	2,954 00	.....	.....
1897, .....	7	3,271 67	+317 67	.....
1898, .....	7	3,338 87	+67 20	.....
1899, .....	7	3,554 29	+215 42	.....
1900, .....	7	3,392 54	+161 75	.....
1901, .....	7	4,048 71	+656 17	+1,094 71
MEN'S, WOMEN'S, MISSES AND CHILDREN'S SHOES.				
1896, .....	15	1,486 56	.....	.....
1897, .....	15	1,502 42	+15 86	.....
1898, .....	15	1,523 90	+21 48	.....

VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average annual product per employee.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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MEN'S, WOMEN'S, MISSES' AND  
CHILDREN'S SHOES—Continued.

1899, .....	15	\$1,660 28	+\$136 38	\$
1900, .....	15	1,648 01	—12 27	.....
1901, .....	15	1,638 37	—9 64	+151 81

SUSPENDERS.

1896, .....	2	2,900 91	.....	.....
1897, .....	2	2,909 17	+8 26	.....
1898, .....	2	3,082 68	+173 51	.....
1899, .....	2	2,983 02	—99 66	.....
1900, .....	2	2,943 40	—39 62	.....
1901, .....	2	3,540 40	+597 00	+639 49

HATS AND CAPS.

1896, .....	3	1,285 10	.....	.....
1897, .....	3	1,599 30	+314 20	.....
1898, .....	3	1,316 34	—282 96	.....
1899, .....	3	1,248 02	—68 32	.....
1900, .....	3	1,468 92	+220 90	.....
1901, .....	3	1,514 69	+45 77	+229 59

FUR AND FELT HATS.

1896, .....	4	1,503 45	.....	.....
1897, .....	4	1,487 22	—16 23	.....
1898, .....	4	1,377 16	—110 06	.....
1899, .....	4	1,431 11	+53 95	.....
1900, .....	4	1,478 90	+47 79	.....
1901, .....	4	1,434 34	—44 56	—69 11

# VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE— Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average annual product per employee.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
WOOL HATS.				
1896, .....	7	\$1,321 43	\$	\$
1897, .....	7	1,452 04	+130 61	.....
1898, .....	7	1,326 88	—125 16	.....
1899, .....	7	1,389 55	+62 67	.....
1900, .....	7	1,653 70	+264 15	.....
1901, .....	7	1,465 08	—188 62	+143 65
UMBRELLAS AND PARASOLS.				
1896, .....	4	1,884 53	.....	.....
1897, .....	4	2,062 10	+177 57	.....
1898, .....	4	2,289 85	+227 75	.....
1899, .....	4	2,318 43	+28 58	.....
1900, .....	4	2,241 55	—76 88	.....
1901, .....	4	2,382 46	+140 91	+497 93
DRESS TRIMMINGS, BRAIDS, ETC.				
1896, .....	8	1,103 71	.....	.....
1897, .....	8	1,056 49	—47 22	.....
1898, .....	8	1,107 11	+50 62	.....
1899, .....	8	1,184 88	+77 77	.....
1900, .....	8	1,258 42	+73 54	.....
1901, .....	8	1,218 89	—39 53	+115 18
SHIRTS AND SHIRT WAISTS.				
1896, .....	9	1,166 85	.....	.....
1897, .....	9	1,074 09	—92 76	.....

# VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE— Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average annual product per employee. •	Increase (+) or decrease (-) as com- pared with the preced- ing year.	Increase (+) or de- crease (-) 1901 as compared with 1896.
<b>SHIRTS AND SHIRT WAISTS—</b> Continued.				
1898, .....	9	\$1,097 33	+\$23 24	\$
1899, .....	9	1,162 78	+65 45	.....
1900, .....	9	1,201 32	+38 54	.....
1901, .....	9	1,193 32	-8 00	+26 47
<b>NECKWEAR.</b>				
1896, .....	3	2,009 18	.....	.....
1897, .....	3	2,033 83	+24 65	.....
1898, .....	3	2,052 95	+19 12	.....
1899, .....	3	2,244 72	+191 77	.....
1900, .....	3	2,192 02	-52 70	.....
1901, .....	3	1,987 31	-204 71	-21 87
<b>COTTON AND WOOLEN CLOTHS.</b>				
1896, .....	24	1,219 85	.....	.....
1897, .....	24	1,347 78	+127 93	.....
1898, .....	24	1,374 30	+26 52	.....
1899, .....	24	1,591 44	+217 14	.....
1900, .....	24	1,429 75	-161 69	.....
1901, .....	24	1,483 83	+54 08	+263 98
<b>CARPETS.</b>				
1896, .....	17	1,605 29	.....	.....
1897, .....	17	1,680 61	+75 32	.....
1898, .....	17	1,752 03	+71 42	.....
1899, .....	17	2,096 25	+344 22	.....
1900, .....	17	2,072 54	-23 71	.....
1901, .....	17	2,339 66	+267 12	+734 37



VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average annual product per employee.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
COTTON GOODS.				
1896, .....	16	\$955 08	\$	\$
1897, .....	16	1,046 31	+91 23	.....
1898, .....	16	1,032 31	—14 00	.....
1899, .....	16	1,072 61	+40 30	.....
1900, .....	16	1,155 68	+83 07	.....
1901, .....	16	1,183 27	+27 59	+228 19
WOOLEN AND WORSTED CAS- SIMERES.				
1896, .....	11	1,435 00	.....	.....
1897, .....	11	1,665 95	+230 95	.....
1898, .....	11	1,646 55	—19 40	.....
1899, .....	11	1,840 41	+193 86	.....
1900, .....	11	1,775 39	—65 02	.....
1901, .....	11	1,955 82	+180 43	+520 82
WOOLEN AND WORSTED FABRICS.				
1896, .....	16	1,373 28	.....	.....
1897, .....	16	1,578 99	+205 71	.....
1898, .....	16	1,730 17	+151 18	.....
1899, .....	16	1,781 54	+51 37	.....
1900, .....	16	1,797 94	+16 40	.....
1901, .....	16	1,888 44	+90 50	+515 16
WOOLEN AND WORSTED YARNS.				
1896, .....	12	1,319 04	.....	.....
1897, .....	12	2,031 21	+712 17	.....

VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average annual product per employee.	Increase (+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease (—) 1901 as compared with 1896.
WOOLEN AND WORSTED YARNS—Continued.				
1898, .....	12	\$2,643 55	+\$612 34	\$
1899, .....	12	3,556 40	+912 85	.....
1900, .....	12	2,583 76	—972 64	.....
1901, .....	12	2,706 35	+122 59	+1,387 31
RUGS, YARNS, ETC.				
1896, .....	5	1,304 16	.....	.....
1897, .....	5	1,313 75	+9 59	.....
1898, .....	5	1,343 70	+29 95	.....
1899, .....	5	1,465 29	+121 59	.....
1900, .....	5	1,436 12	—29 17	.....
1901, .....	5	1,321 70	—114 42	+17 54
CARPET YARNS.				
1896, .....	11	2,155 92	.....	.....
1897, .....	11	2,798 48	+642 56	.....
1898, .....	11	2,412 92	—385 56	.....
1899, .....	11	2,778 50	+365 58	.....
1900, .....	11	2,593 20	—185 30	.....
1901, .....	11	2,612 19	+18 99	+456 27
COTTON YARNS.				
1896, .....	7	1,636 59	.....	.....
1897, .....	7	1,595 73	—40 86	.....
1898, .....	7	1,567 23	—28 50	.....
1899, .....	7	1,666 97	+99 74	.....
1900, .....	7	1,803 41	+136 44	.....
1901, .....	7	1,844 53	+41 12	+207 94

# VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE— Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average annual product per employee.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
<b>WORSTED WOOLEN AND COT- TON YARNS.</b>				
1896, .....	10	\$1,410 47	\$	\$
1897, .....	10	1,724 34	+313 87	.....
1898, .....	10	1,509 30	—215 04	.....
1899, .....	10	2,167 77	+658 47	.....
1900, .....	10	2,002 18	—165 59	.....
1901, .....	10	1,787 18	—215 00	+376 71
<b>WOOLEN BLANKETS, FLAN- NELS, ETC.</b>				
1896, .....	5	1,788 58	.....	.....
1897, .....	5	1,698 89	—89 69	.....
1898, .....	5	1,982 50	+283 61	.....
1899, .....	5	1,689 24	—293 26	.....
1900, .....	5	1,874 87	+185 63	.....
1901, .....	5	1,831 39	—43 46	+42 81
<b>LACE GOODS.</b>				
1896, .....	3	1,191 73	.....	.....
1897, .....	3	1,271 28	+79 55	.....
1898, .....	3	1,252 26	—19 02	.....
1899, .....	3	1,191 15	—61 11	.....
1900, .....	3	1,069 51	—121 64	.....
1901, .....	3	1,157 02	+87 51	—34 71
<b>CHENILLE GOODS.</b>				
1896, .....	3	824 06	.....	.....
1897, .....	3	858 46	+34 40	.....

VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments considered.	Average annual product per employee.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease(—) 1901 as compared with 1896.
CHENILLE GOODS—Continued.				
1898, .....	3	\$987 11	+\$128 65	\$
1899, .....	3	1,105 86	+118 75	.....
1900, .....	3	1,113 17	+7 31	.....
1901, .....	3	1,163 98	+50 81	+339 92
UPHOLSTERY GOODS.				
1896, .....	10	1,379 96	.....	.....
1897, .....	10	1,390 97	+11 01	.....
1898, .....	10	1,457 76	+66 79	.....
1899, .....	10	1,542 82	+85 06	.....
1900, .....	10	1,481 74	—61 08	.....
1901, .....	10	1,507 19	+25 45	+127 23
KNIT GOODS, UNDERWEAR.				
1896, .....	13	1,276 70	.....	.....
1897, .....	13	1,298 89	+22 19	.....
1898, .....	13	1,360 22	+61 33	.....
1899, .....	13	1,344 95	—15 27	.....
1900, .....	13	1,358 53	+13 58	.....
1901, .....	13	1,325 64	—32 89	+48 94
HOSIERY.				
1896, .....	31	787 25	.....	.....
1897, .....	31	806 03	+18 78	.....
1898, .....	31	824 77	+18 74	.....
1899, .....	31	852 54	+27 77	.....
1900, .....	31	882 24	+29 70	.....
1901, .....	31	900 33	+18 09	+113 08

VALUE OF AVERAGE ANNUAL PRODUCT PER EMPLOYEE—  
Continued.

COMPARISON OF VALUE OF PRODUCTION PER EMPLOYEE—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Average annual product per employe.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
<b>SILK—BROAD GOODS, THROWN SILK, YARNS, ETC.</b>				
1896, .....	6	\$1,492 56	\$	\$
1897, .....	6	1,382 17	—110 39	.....
1898, .....	6	1,466 14	+83 97	.....
1899, .....	6	1,928 51	+462 37	.....
1900, .....	6	1,667 34	—261 17	.....
1901, .....	6	1,404 57	—262 77	—87 99
<b>SILK—BROAD GOODS AND RIBBONS.</b>				
1896, .....	2	1,115 52	.....	.....
1897, .....	2	1,157 06	+41 54	.....
1898, .....	2	1,317 70	+160 64	.....
1899, .....	2	1,556 20	+238 50	.....
1900, .....	2	1,590 88	+34 68	.....
1901, .....	2	1,336 49	—254 39	+220 97
<b>SILK—RIBBONS.</b>				
1896, .....	4	1,636 01	.....	.....
1897, .....	4	1,674 56	+38 55	.....
1898, .....	4	1,684 26	+9 70	.....
1899, .....	4	1,612 27	—71 99	.....
1900, .....	4	1,503 73	—108 54	.....
1901, .....	4	1,561 65	+57 92	—74 36



## VALUE OF PRODUCT.

## COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

NOTE.—In this table the value of manufactured product by the same establishments for the year 1896, 1897, 1898, 1899, 1900 and 1901 is presented, with the relative increase or decrease, together with the increase or decrease 1901 over 1896. Eighty-eight industries, representing 801 establishments, are considered.

Character of Industry and Years.	Number of establishments considered.	Value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
STEEL CASTINGS.				
1896, .....	7	\$1,496,056	\$	\$
1897, .....	7	1,392,020	—\$106,035	.....
1898, .....	7	2,098,933	+707,913	.....
1899, .....	7	2,857,935	+759,002	.....
1900, .....	7	3,172,100	+314,165	.....
1901, .....	7	2,542,494	—629,606	+1,046,438
STEEL BILLETS, SLABS, BLOOMS, ETC.				
1896, .....	4	7,149,210	.....	.....
1897, .....	4	10,511,198	+3,361,988	.....
1898, .....	4	10,257,159	—254,039	.....
1899, .....	4	18,832,437	+8,575,278	.....
1900, .....	4	14,649,357	—4,183,080	.....
1901, .....	4	17,992,938	+3,343,581	+10,843,728
TOOL STEEL.				
1896, .....	3	433,801	.....	.....
1897, .....	3	270,029	—163,772	.....
1898, .....	3	445,065	+175,036	.....
1899, .....	3	479,480	+34,415	.....
1900, .....	3	436,340	—43,140	.....
1901, .....	3	664,097	+227,757	+230,296

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of production.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
IRON AND STEEL FORGINGS.				
1896, .....	7	\$366,163	\$	\$
1897, .....	7	315,364	—50,799	.....
1898, .....	7	463,025	+147,661	.....
1899, .....	7	784,254	+321,229	.....
1900, .....	7	745,873	—38,381	.....
1901, .....	7	754,797	+8,924	+388,634
IRON SPECIALTIES.				
1896, .....	2	77,966	.....	.....
1897, .....	2	119,167	+41,201	.....
1898, .....	2	78,107	—41,060	.....
1899, .....	2	80,420	+2,313	.....
1900, .....	2	89,724	+9,304	.....
1901, .....	2	105,750	+16,026	+277,784
MALLEABLE IRON				
1896, .....	4	1,933,107	.....	.....
1897, .....	4	1,627,267	—305,840	.....
1898, .....	4	2,288,315	+661,048	.....
1899, .....	4	2,807,229	+518,914	.....
1900, .....	4	2,485,414	—321,815	.....
1901, .....	4	2,153,732	—331,682	+229,625
BOLTS, NUTS, ETC.				
1896, .....	8	1,269,306	.....	.....
1897, .....	8	1,221,590	—47,316	.....
1898, .....	8	1,424,103	+202,113	.....
1899, .....	8	2,465,793	+1,041,690	.....

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## BOLTS, NUTS, ETC.—Continued.

1900, .....	8	\$2,843,678	+\$377,885	\$
1901, .....	8	2,515,995	—327,683	+1,246,689

## WIRE NAILS AND RIVETS.

1896, .....	4	924,754	.....	.....
1897, .....	4	1,494,842	+570,088	.....
1898, .....	4	1,083,291	—411,551	.....
1899, .....	4	1,803,903	+720,612	.....
1900, .....	4	1,347,191	—456,712	.....
1901, .....	4	795,615	—551,575	—129,138

## TACKS AND SMALL NAILS.

1896, .....	4	115,749	.....	.....
1897, .....	4	107,112	—8,637	.....
1898, .....	4	94,162	—12,950	.....
1899, .....	4	192,544	+98,482	.....
1900, .....	4	171,231	—21,353	.....
1901, .....	4	200,023	+29,237	+84,779

## WIRE.

1896, .....	5	228,163	.....	.....
1897, .....	5	222,359	—5,764	.....
1898, .....	5	267,257	+44,858	.....
1899, .....	5	310,572	+43,315	.....
1900, .....	5	452,592	+142,020	.....
1901, .....	5	459,569	+6,977	+231,406

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
WIRE ROPE.				
1896, .....	2	\$615,004	\$	\$
1897, .....	2	596,192	—18,812	.....
1898, .....	2	655,466	+59,274	....
1899, .....	2	971,113	+315,652	.....
1900, .....	2	1,471,284	+500,166	.....
1901, .....	2	1,693,920	+222,636	+1,078,916
WIRE GOODS.				
1896, .....	5	217,040	.....	.....
1897, .....	5	259,311	+42,271	.....
1898, .....	5	323,568	+64,257	.....
1899, .....	5	396,067	+72,499	.....
1900, .....	5	342,677	—53,390	.....
1901, .....	5	376,397	+33,720	+159,357
WAGON AND CARRIAGE AXLES AND SPRINGS.				
1896, .....	6	544,482	.....	.....
1897, .....	6	554,784	+10,302	.....
1898, .....	6	645,805	+91,021	.....
1899, .....	6	914,713	+268,908	.....
1900, .....	6	737,639	—177,074	.....
1901, .....	6	867,646	+130,007	+323,164
SCALES, ETC.				
1896, .....	4	233,592	.....	.....
1897, .....	4	249,765	+16,173	.....
1898, .....	4	263,364	+13,599	.....

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## SCALES, ETC.—Continued.

1899, .....	4	\$346,487	+\$83,123	\$
1900, .....	4	375,036	+28,549	.....
1901, .....	4	400,587	+25,551	+166,995

## STOVES, RANGES, HEATERS, ETC.

1896, .....	37	4,111,827	.....	.....
1897, .....	37	4,177,453	+65,626	.....
1898, .....	37	4,227,360	+49,907	.....
1899, .....	37	5,044,253	+816,893	.....
1900, .....	37	5,360,816	+316,563	.....
1901, .....	37	5,048,054	—312,762	+936,227

## BATH BOILERS, TANKS, ETC.

1896, .....	2	61,186	.....	.....
1897, .....	2	63,699	+2,513	.....
1898, .....	2	62,102	—1,597	.....
1899, .....	2	89,691	+27,589	.....
1900, .....	2	82,639	—7,052	.....
1901, .....	2	95,958	+13,319	+34,772

## HARDWARE SPECIALTIES.

1896, .....	14	2,382,624	.....	.....
1897, .....	14	2,686,482	+303,858	.....
1898, .....	14	2,823,993	+137,511	.....
1899, .....	14	3,839,960	+1,015,967	.....
1900, .....	14	3,341,572	—498,388	.....
1901, .....	14	3,618,381	+276,809	+1,235,757



## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
EDGE TOOLS.				
1896, .....	12	\$1,083,068	\$	\$
1897, .....	12	781,832	—301,236	.....
1898, .....	12	1,069,190	+287,358	.....
1899, .....	12	1,393,284	+324,094	.....
1900, .....	12	1,618,418	+225,134	.....
1901, .....	12	1,488,852	—129,566	+405,784
WRENCHES, PICKS, ETC.				
1896, .....	5	363,054	.....	.....
1897, .....	5	462,043	+98,989	.....
1898, .....	5	494,058	+32,015	.....
1899, .....	5	685,497	+191,439	.....
1900, .....	5	690,584	+5,087	.....
1901, .....	5	713,089	+22,505	+350,035
LOCOMOTIVES AND CARS BUILT AND REPAIRED.				
1896, .....	3	6,983,962	.....	.....
1897, .....	3	6,534,498	—449,464	.....
1898, .....	3	8,000,396	+1,465,898	.....
1899, .....	3	10,020,362	+2,019,966	.....
1900, .....	3	11,203,744	+1,183,382	.....
1901, .....	3	11,622,675	+418,931	+4,638,713
WROUGHT IRON PIPE AND TUBES.				
1896, .....	5	11,907,420	.....	.....
1897, .....	5	11,341,565	—565,855	.....
1898, .....	5	14,552,862	+3,211,297	.....

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of production.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
WROUGHT IRON PIPE AND TUBES—Continued.				
1899, .....	5	\$26,160,998	+\$11,608,136	\$
1900, .....	5	21,342,983	—4,818,015	.....
1901, .....	5	27,381,482	+6,038,499	+15,474,062
CAST IRON PIPE.				
1896, .....	3	862,648	.....	.....
1897, .....	3	1,184,240	+321,592	.....
1898, .....	3	1,260,028	+75,798	.....
1899, .....	3	1,350,801	+90,763	.....
1900, .....	3	1,745,213	+394,412	.....
1901, .....	3	2,004,285	+259,072	+1,141,637
BRASS, COPPER AND BRONZE GOODS.				
1896, .....	19	2,218,718	.....	.....
1897, .....	19	2,001,110	—217,608	.....
1898, .....	19	2,416,478	+415,368	.....
1899, .....	19	3,549,845	+1,133,367	.....
1900, .....	19	3,487,255	—62,590	.....
1901, .....	19	4,069,549	+582,294	+1,850,831
IRON AND STEEL BRIDGES.				
1896, .....	7	3,429,136	.....	.....
1897, .....	7	3,115,371	—313,765	.....
1898, .....	7	3,717,213	+601,842	.....
1899, .....	7	5,095,097	+1,377,884	.....
1900, .....	7	8,649,413	+3,554,316	.....
1901, .....	7	6,432,504	—2,216,909	+3,003,368

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
LOCOMOTIVES, STATIONARY ENGINES, ETC.				
1896, .....	9	\$8,792,061	\$	\$
1897, .....	9	8,531,117	—260,944	.....
1898, .....	9	12,862,598	+4,331,481	.....
1899, .....	9	17,572,598	+4,710,000	.....
1900, .....	9	24,600,085	+7,027,487	.....
1901, .....	9	27,094,502	+2,494,417	+18,302,441
ENGINES, BOILERS, ETC.				
1896, .....	10	3,230,705	.....	.....
1897, .....	10	2,658,616	—572,089	.....
1898, .....	10	3,088,737	+430,121	.....
1899, .....	10	4,574,136	+1,485,399	.....
1900, .....	10	5,088,689	+514,553	.....
1901, .....	10	5,100,778	+12,089	+1,870,073
CARS, SPRINGS, AXLES AND RAILWAY SUPPLIES.				
1896, .....	12	4,603,466	.....	.....
1897, .....	12	4,359,164	—244,302	.....
1898, .....	12	8,227,597	+3,868,433	.....
1899, .....	12	18,549,857	+10,322,260	.....
1900, .....	12	30,211,417	+11,661,560	.....
1901, .....	12	28,678,934	—1,532,483	+24,075,468
IRON VESSELS AND ENGINES.				
1896, .....	3	4,991,255	.....	.....
1897, .....	3	4,588,448	—402,807	.....
1898, .....	3	6,635,431	+2,046,983	.....

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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IRON VESSELS AND ENGINES—  
Continued.

1899, .....	3	\$9,165,761	+\$2,530,330	\$
1900, .....	3	12,062,974	+2,897,213	.....
1901, .....	3	10,619,270	—1,443,704	+5,628,015

## BOILERS, TANKS, STACKS, ETC.

1896, .....	21	1,951,211	.....	.....
1897, .....	21	1,904,346	—46,865	.....
1898, .....	21	2,455,255	+550,909	.....
1899, .....	21	3,454,771	+999,516	.....
1900, .....	21	4,085,048	+630,277	.....
1901, .....	21	4,758,297	+673,249	+2,807,086

## MACHINERY.

1896, .....	21	5,397,999	.....	.....
1897, .....	21	5,451,809	+53,810	.....
1898, .....	21	6,500,975	+1,049,166	.....
1899, .....	21	8,730,374	+2,229,399	.....
1900, .....	21	10,067,941	+1,337,567	.....
1901, .....	21	10,493,408	+425,467	+5,095,409

FOUNDRIES AND MACHINE  
SHOPS.

1896, .....	25	2,643,208	.....	.....
1897, .....	25	2,965,528	+322,320	.....
1898, .....	25	3,571,600	+606,072	.....
1899, .....	25	5,201,285	+1,629,685	.....
1900, .....	25	5,867,126	+665,841	.....
1901, .....	25	5,911,565	+44,439	+3,268,357

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
FILES, ETC.				
1896, .....	2	\$321,222	\$	\$
1897, .....	2	329,533	+8,311	.....
1898, .....	2	400,465	+70,932	.....
1899, .....	2	456,967	+56,502	.....
1900, .....	2	477,377	+20,410	.....
1901, .....	2	589,335	+111,958	+268,113
SAWS.				
1896, .....	3	88,186	.....	.....
1897, .....	3	71,437	—16,749	.....
1898, .....	3	76,338	+4,901	.....
1899, .....	3	83,624	+7,286	.....
1900, .....	3	132,105	+48,481	.....
1901, .....	3	128,426	—3,679	+40,240
PLUMBER SUPPLIES.				
1896, .....	3	1,078,000	.....	.....
1897, .....	3	962,000	—116,000	.....
1898, .....	3	1,097,058	+135,058	.....
1899, .....	3	1,436,661	+339,603	.....
1900, .....	3	1,301,478	—135,183	.....
1901, .....	3	1,431,561	+130,083	+353,561
ELECTRICAL SUPPLIES.				
1896, .....	4	3,653,461	.....	.....
1897, .....	4	3,463,804	—189,657	.....
1898, .....	4	6,821,374	+3,357,570	.....
1899, .....	4	11,462,408	+4,641,034	.....



## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
ELECTRICAL SUPPLIES—Continued.				
1900, .....	4	\$15,447,949	+\$3,985,541	\$
1901, .....	4	16,297,597	+849,648	+12,644,136
SHOVELS, SPADES, SCOOPS, ETC.				
1896, .....	8	813,573	.....	.....
1897, .....	8	803,048	—10,525	.....
1898, .....	8	997,314	+194,266	.....
1899, .....	8	1,493,946	+496,632	.....
1900, .....	8	1,134,772	—359,174	.....
1901, .....	8	1,612,469	+477,697	+798,896
SAFES AND VAULT DOORS.				
1896, .....	2	151,546	.....	.....
1897, .....	2	157,476	+5,930	.....
1898, .....	2	153,085	—4,391	.....
1899, .....	2	156,773	+3,688	.....
1900, .....	2	508,936	+352,163	.....
1901, .....	2	333,538	—175,398	+181,992
METAL AND METALLIC GOODS.				
1896, .....	3	161,989	.....	.....
1897, .....	3	184,101	+22,112	.....
1898, .....	3	207,496	+23,395	.....
1899, .....	3	300,978	+93,482	.....
1900, .....	3	334,973	+33,995	.....
1901, .....	3	344,926	+9,953	+182,937

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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BUILDING AND STRUCTURAL  
IRON WORK.

1896, .....	2	\$1,195,156	\$	\$
1897, .....	2	1,249,288	+54,132	.....
1898, .....	2	2,057,639	+808,351	.....
1899, .....	2	2,157,573	+99,934	.....
1900, .....	2	4,572,828	+2,415,255	.....
1901, .....	2	6,403,461	+1,830,633	+5,208,305

## IRON CHAINS.

1896, .....	5	331,059	.....	.....
1897, .....	5	336,049	+4,990	.....
1898, .....	5	409,304	+73,255	.....
1899, .....	5	584,109	+174,805	.....
1900, .....	5	508,450	—75,659	.....
1901, .....	5	561,193	+52,743	+230,134

## IRON FENCES AND RAILINGS.

1896, .....	7	119,501	.....	.....
1897, .....	7	145,641	+26,140	.....
1898, .....	7	187,059	+41,418	.....
1899, .....	7	260,498	+73,439	.....
1900, .....	7	306,812	+46,314	.....
1901, .....	7	379,015	+72,203	+259,514

## AGRICULTURAL IMPLEMENTS.

1896, .....	12	2,251,507	.....	.....
1897, .....	12	2,434,451	+182,944	.....
1898, .....	12	2,840,608	+406,157	.....

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
AGRICULTURAL IMPLEMENTS —Continued.				
1899, .....	12	\$3,185,835	+\$345,227	\$
1900, .....	12	3,176,317	—9,518	.....
1901, .....	12	3,413,376	+237,059	+1,161,869
STEAM PUMPS.				
1896, .....	2	334,056	.....	.....
1897, .....	2	249,488	—84,568	.....
1898, .....	2	313,511	+64,023	.....
1899, .....	2	411,714	+98,203	.....
1900, .....	2	645,011	+233,297	.....
1901, .....	2	411,468	—233,543	+77,412
BICYCLES.				
1896, .....	3	606,001	.....	.....
1897, .....	3	645,714	+39,713	.....
1898, .....	3	683,862	+38,148	.....
1899, .....	3	523,870	—159,992	.....
1900, .....	3	377,368	—146,502	.....
1901, .....	3	197,218	—180,150	—408,783
PIANOS AND ORGANS.				
1896, .....	2	94,327	.....	.....
1897, .....	2	95,599	+1,272	.....
1898, .....	2	136,971	+41,372	.....
1899, .....	2	178,679	+41,708	.....
1900, .....	2	205,621	+26,942	.....
1901, .....	2	197,752	—7,869	+103,425

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase(+) or decrease (—) 1901 as compared with 1896.
TINWARE.				
1896, .....	5	\$477,000	\$	\$
1897, .....	5	467,000	—10,000	.....
1898, .....	5	469,200	+2,200	.....
1899, .....	5	545,475	+76,275	.....
1900, .....	5	554,813	+9,338	.....
1901, .....	5	639,243	+84,430	+162,243
PAPER MANUFACTORIES.				
1896, .....	8	3,370,998	.....	.....
1897, .....	8	3,310,376	—60,622	.....
1898, .....	8	3,315,552	+5,176	.....
1899, .....	8	4,254,182	+938,630	.....
1900, .....	8	4,671,243	+417,061	.....
1901, .....	8	4,567,498	—103,745	+1,196,500
WALL PAPER.				
1896, .....	4	844,811	.....	.....
1897, .....	4	988,000	+143,189	.....
1898, .....	4	1,154,386	+166,386	.....
1899, .....	4	1,255,190	+100,804	.....
1900, .....	4	1,120,084	—135,106	.....
1901, .....	4	1,046,365	—73,719	+201,554
CIGARS.				
1896, .....	46	7,138,707	.....	.....
1897, .....	46	8,100,451	+961,644	.....
1898, .....	46	8,866,424	+765,973	.....
1899, .....	46	9,676,533	+810,109	.....

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of production.	Increase(+) or decrease (-) as com- pared with the preced- ing year.	Increase (+) or de- crease(-) 1901 as compared with 1896.
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## CIGARS—Continued.

1900, .....	46	\$10,362,696	+\$686,163	\$
1901, .....	46	10,344,882	-17,814	+3,206,175

## BOOK BINDING.

1896, .....	3	167,856	.....	.....
1897, .....	3	162,373	-5,483	.....
1898, .....	3	180,567	+18,194	.....
1899, .....	3	208,527	+27,960	.....
1900, .....	3	217,460	+8,933	.....
1901, .....	3	236,637	+19,177	+68,781

## CORDAGE, ROPE AND TWINE.

1896, .....	5	4,777,490	.....	.....
1897, .....	5	4,713,313	-64,177	.....
1898, .....	5	4,947,813	+234,500	.....
1899, .....	5	6,219,058	+1,271,245	.....
1900, .....	5	6,922,914	+703,856	.....
1901, .....	5	7,446,401	+523,487	+2,668,911

## PAPER, PAPER BOXES, ENVELOPES, ETC.

1896, .....	27	2,009,846	.....	.....
1897, .....	27	2,049,073	+39,227	.....
1898, .....	27	2,282,183	+233,110	.....
1899, .....	27	2,473,800	+191,617	.....
1900, .....	27	2,523,904	+50,104	.....
1901, .....	27	2,493,536	-30,368	+483,690

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
POTTERY.				
1896, .....	2	\$206,732	\$	\$
1897, .....	2	192,167	—14,565	.....
1898, .....	2	226,326	+34,159	.....
1899, .....	2	244,254	+17,928	.....
1900, .....	2	232,121	—12,133	.....
1901, .....	2	246,060	+13,939	+39,328
PAVING BRICK.				
1896, .....	7	333,078	.....	.....
1897, .....	7	348,220	+15,142	.....
1898, .....	7	367,395	+19,175	.....
1899, .....	7	416,263	+48,868	.....
1900, .....	7	604,307	+188,044	.....
1901, .....	7	412,809	—191,498	+79,731
BUILDING BRICK.				
1896, .....	35	1,569,682	.....	.....
1897, .....	35	1,544,553	—25,129	.....
1898, .....	35	1,492,161	—52,392	.....
1899, .....	35	1,676,130	+183,969	.....
1900, .....	35	1,609,052	—67,078	.....
1901, .....	35	1,722,242	+113,190	+152,560
FIRE BRICK.				
1896, .....	18	1,639,926	.....	.....
1897, .....	18	1,570,074	—69,852	.....
1898, .....	18	1,915,392	+345,318	.....
1899, .....	18	2,486,398	+571,006	.....



## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
FIRE BRICK—Continued.				
1900, .....	18	\$3,560,462	+\$1,074,064	\$
1901, .....	18	3,221,632	—338,830	+1,581,706
SLATE ROOFING, ETC., TONNAGE.				
1896, .....	6	390,376	.....	.....
1897, .....	6	515,919	+125,543	.....
1898, .....	6	537,702	+21,783	.....
1899, .....	6	467,112	—70,590	.....
1900, .....	6	520,415	+53,303	.....
1901, .....	6	729,002	+208,587	+338,626
SLATE ROOFING, ETC., SQUARES.				
1896, .....	14	590,366	.....	.....
1897, .....	14	726,445	+136,079	.....
1898, .....	14	756,997	+30,552	.....
1899, .....	14	930,606	+173,609	.....
1900, .....	14	888,733	—41,867	.....
1901, .....	14	967,230	+78,497	+376,864
WINDOW GLASS, BOTTLES AND TABLE GOODS.				
1896, .....	22	5,991,102	.....	.....
1897, .....	22	6,692,767	+701,665	.....
1898, .....	22	7,713,185	+1,020,418	.....
1899, .....	22	9,295,604	+1,582,419	.....
1900, .....	22	10,120,232	+824,628	.....
1901, .....	22	8,723,430	—1,396,802	+2,732,328

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase(+) or decrease(—) 1901 as compared with 1896.
GLAZED AND CHROME KID.				
1896, .....	7	\$8,049,657	\$	\$
1897, .....	7	10,649,292	+2,599,635	.....
1898, .....	7	12,691,322	+2,042,030	.....
1899, .....	7	16,342,644	+3,651,322	.....
1900, .....	7	15,059,504	—1,283,140	.....
1901, .....	7	19,364,997	+4,305,493	+11,315,340
MEN'S, WOMEN'S, MISSES AND CHILDREN'S SHOES.				
1896, .....	15	5,055,796	.....	.....
1897, .....	15	5,279,502	+223,706	.....
1898, .....	15	5,620,155	+340,653	.....
1899, .....	15	5,791,046	+170,891	.....
1900, .....	15	5,713,651	—77,395	.....
1901, .....	15	5,773,618	+59,967	+717,822
SUSPENDERS.				
1896, .....	2	319,100	.....	.....
1897, .....	2	349,100	+30,000	.....
1898, .....	2	391,500	+42,400	.....
1899, .....	2	483,250	+91,750	.....
1900, .....	2	624,000	+140,750	.....
1901, .....	2	701,000	+77,000	+381,900
HATS AND CAPS.				
1896, .....	3	525,607	.....	.....
1897, .....	3	782,060	+256,453	.....
1898, .....	3	737,149	—44,911	.....

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## HATS AND CAPS—Continued.

1899, .....	3	\$698,891	—\$38,258	\$
1900, .....	3	901,917	+203,026	.....
1901, .....	3	1,046,651	+144,734	+521,044

## FUR AND FELT HATS.

1896, .....	4	1,447,818	.....	.....
1897, .....	4	1,558,607	+110,789	.....
1898, .....	4	1,731,063	+172,456	.....
1899, .....	4	2,020,731	+289,668	.....
1900, .....	4	2,494,914	+474,183	.....
1901, .....	4	2,954,738	+459,824	+1,506,920

## WOOL HATS.

1896, .....	7	521,966	.....	.....
1897, .....	7	649,061	+127,095	.....
1898, .....	7	636,904	—12,157	.....
1899, .....	7	746,186	+109,282	.....
1900, .....	7	931,034	+184,848	.....
1901, .....	7	788,215	—142,819	+266,249

## UMBRELLAS AND PARASOLS.

1896, .....	4	1,109,989	.....	.....
1897, .....	4	1,185,705	+75,716	.....
1898, .....	4	1,156,372	—29,333	.....
1899, .....	4	1,231,088	+74,716	.....
1900, .....	4	1,134,223	—96,865	.....
1901, .....	4	1,243,643	+109,420	+133,654

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease(—) 1901 as compared with 1896.
DRESS TRIMMINGS, BRAIDS, ETC.				
1896, .....	8	\$1,218,500	\$	\$
1897, .....	8	1,471,696	+253,196	.....
1898, .....	8	1,708,275	+236,579	.....
1899, .....	8	2,085,395	+377,120	.....
1900, .....	8	2,195,940	+110,545	.....
1901, .....	8	2,034,319	—161,621	+815,819
SHIRTS AND SHIRT WAISTS.				
1896, .....	9	2,105,007	.....	.....
1897, .....	9	1,953,771	—151,236	.....
1898, .....	9	2,186,983	+233,212	.....
1899, .....	9	2,667,418	+480,435	.....
1900, .....	9	2,808,677	+141,259	.....
1901, .....	9	2,886,635	+77,958	+781,628
NECKWEAR.				
1896, .....	3	381,745	.....	.....
1897, .....	3	353,886	—27,859	.....
1898, .....	3	375,689	+21,803	.....
1899, .....	3	437,720	+62,041	.....
1900, .....	3	414,292	—23,428	.....
1901, .....	3	359,704	—54,588	—22,041
COTTON AND WOOLEN CLOTHS.				
1896, .....	24	5,444,181	.....	.....
1897, .....	24	6,407,337	+963,156	.....
1898, .....	24	6,466,073	+58,736	.....

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of production.	Increase (+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease (—) 1901 as compared with 1896.
COTTON AND WOOLEN CLOTHS —Continued.				
1899, .....	24	\$8,264,359	+\$1,798,286	\$
1900, .....	24	8,183,908	—80,451	.....
1901, .....	24	7,925,125	—258,783	+2,480,944
CARPETS.				
1896, .....	17	3,632,760	.....	.....
1897, .....	17	4,544,385	+911,625	.....
1898, .....	17	4,823,328	+278,943	.....
1899, .....	17	5,940,777	+1,117,449	.....
1900, .....	17	5,790,677	—150,100	.....
1901, .....	17	6,553,397	+762,720	+2,920,637
COTTON GOODS.				
1896, .....	16	2,680,912	.....	.....
1897, .....	16	2,998,724	+317,812	.....
1898, .....	16	3,104,170	+105,446	.....
1899, .....	16	3,533,249	+429,079	.....
1900, .....	16	3,724,764	+191,515	.....
1901, .....	16	3,682,324	—42,440	+1,001,412
WOOLEN AND WORSTED CASSI- MERES.				
1896, .....	11	1,970,251	.....	.....
1897, .....	11	2,618,868	+648,617	.....
1898, .....	11	2,799,134	+180,266	.....
1899, .....	11	3,548,303	+749,169	.....
1900, .....	11	3,421,168	—127,135	.....
1901, .....	11	3,854,917	+433,749	+1,884,666

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
WOOLEN AND WORSTED FABRICS.				
1896, .....	16	\$3,821,846	\$	\$
1897, .....	16	5,221,713	+1,399,867	.....
1898, .....	16	5,320,285	+98,572	.....
1899, .....	16	6,082,189	+761,904	.....
1900, .....	16	7,042,519	+960,330	.....
1901, .....	16	6,220,518	+822,001	+2,398,672
WOOLEN AND WORSTED YARNS.				
1896, .....	12	2,012,851	.....	.....
1897, .....	12	3,111,819	+1,098,968	.....
1898, .....	12	3,819,936	+708,117	.....
1899, .....	12	5,256,352	+1,436,416	.....
1900, .....	12	4,239,957	—1,016,395	.....
1901, .....	12	4,487,135	+247,178	+2,474,284
RUGS, YARNS, ETC.				
1896, .....	5	4,087,237	.....	.....
1897, .....	5	4,031,915	—55,322	.....
1898, .....	5	3,931,652	—100,263	.....
1899, .....	5	4,504,288	+572,636	.....
1900, .....	5	4,552,504	+48,216	.....
1901, .....	5	4,241,326	—311,178	+154,089
CARPET YARNS.				
1896, .....	11	1,213,783	.....	.....
1897, .....	11	1,749,051	+535,268	.....
1898, .....	11	1,302,256	—446,795	.....



## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of production.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
CARPET YARNS—Continued.				
1899, .....	11	\$1,758,794	+\$456,538	\$
1900, .....	11	1,737,441	—21,353	.....
1901, .....	11	1,797,185	+59,744	+583,402
COTTON YARNS.				
1896, .....	7	1,137,430	.....	.....
1897, .....	7	1,147,331	+9,901	.....
1898, .....	7	1,245,952	+98,621	.....
1899, .....	7	1,333,579	+87,627	.....
1900, .....	7	1,568,971	+235,392	.....
1901, .....	7	1,328,065	—240,906	+190,635
WORSTED, WOOLEN AND COT- TON YARNS.				
1896, .....	10	2,304,716	.....	.....
1897, .....	10	3,233,134	+928,418	.....
1898, .....	10	2,890,304	—342,830	.....
1899, .....	10	4,127,434	+1,237,130	.....
1900, .....	10	4,424,815	+297,381	.....
1901, .....	10	4,069,413	—355,402	+1,764,697
WOOLEN BLANKETS, FLAN- NELS, ETC.				
1896, .....	5	1,282,412	.....	.....
1897, .....	5	1,221,499	—60,913	.....
1898, .....	5	2,107,398	+885,899	.....
1899, .....	5	1,633,499	—473,899	.....
1900, .....	5	1,676,132	+42,633	.....
1901, .....	5	1,670,231	—5,901	+387,819

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
LACE GOODS.				
1896, .....	3	\$909,289	\$	\$
1897, .....	3	1,086,945	+177,656	.....
1898, .....	3	1,219,698	+132,753	.....
1899, .....	3	1,307,879	+88,181	.....
1900, .....	3	1,337,964	+30,085	.....
1901, .....	3	1,432,392	+94,428	+523,103
CHENILLE GOODS.				
1896, .....	3	502,678	.....	.....
1897, .....	3	573,450	+70,772	.....
1898, .....	3	591,280	+17,830	.....
1899, .....	3	664,622	+73,342	.....
1900, .....	3	728,013	+63,391	.....
1901, .....	3	791,504	+63,491	+288,826
UPHOLSTERY GOODS.				
1896, .....	10	2,674,368	.....	.....
1897, .....	10	2,864,002	+189,634	.....
1898, .....	10	3,100,667	+236,665	.....
1899, .....	10	3,514,614	+413,947	.....
1900, .....	10	3,153,140	—361,474	.....
1901, .....	10	3,339,940	+186,800	+665,572
KNIT GOODS, UNDERWEAR.				
1896, .....	13	2,978,552	.....	.....
1897, .....	13	3,338,148	+359,596	.....
1898, .....	13	3,493,036	+154,888	.....
1899, .....	13	3,851,935	+358,899	.....

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896
KNIT GOODS, UNDERWEAR— Continued.				
1900, .....	13	\$4,330,995	+\$479,060	\$
1901, .....	13	3,950,409	—380,586	+971,857
HOSIERY.				
1896, .....	31	3,744,935	.....	.....
1897, .....	31	4,518,589	+773,654	.....
1898, .....	31	4,880,155	+361,566	.....
1899, .....	31	5,239,702	+359,547	.....
1900, .....	31	5,816,615	+576,913	.....
1901, .....	31	6,082,610	+265,995	+2,337,675
SILK—BROAD GOODS, THROWN SILK, YARNS, ETC.				
1896, .....	6	3,423,925	.....	.....
1897, .....	6	4,808,583	+1,384,658	.....
1898, .....	6	5,555,201	+746,618	.....
1899, .....	6	6,944,577	+1,389,376	.....
1900, .....	6	6,319,225	—625,352	.....
1901, .....	6	5,664,636	—654,589	+2,240,711
SILK—BROAD GOODS AND RIB- BONS.				
1896, .....	2	1,450,181	.....	.....
1897, .....	2	2,371,966	+921,785	.....
1898, .....	2	2,898,933	+526,967	.....
1899, .....	2	3,112,400	+213,467	.....
1900, .....	2	2,784,047	—328,353	.....
1901, .....	2	3,207,575	+423,528	+1,757,394

## VALUE OF PRODUCT—Continued.

COMPARISON OF VALUE OF MANUFACTURED PRODUCT—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of production.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
SILK—RIBBONS.				
1896, .....	4	\$705,120	\$	\$
1897, .....	4	895,892	+190,772	.....
1898, .....	4	1,067,823	+171,931	.....
1899, .....	4	1,038,299	—29,524	.....
1900, .....	4	1,094,713	+56,414	.....
1901, ..	4	1,419,536	+324,823	+714,416

## - AVERAGE YEARLY EARNINGS.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES, SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

NOTE.—In this table the average yearly earnings by the same establishments for the years 1896, 1897, 1898, 1899, 1900 and 1901 is presented, with the relative increase or decrease, together with the increase or decrease 1901 over 1896. Eighty-eight industries, representing 801 establishments, are considered.

Character of Industry and Years.	Number of establishments considered.	Average yearly earnings.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## STEEL CASTINGS.

1896, .....	7	\$455 72	\$	\$
1897, .....	7	447 85	—7 87	.....
1898, .....	7	454 28	+6 43	.....
1899, .....	7	491 89	+37 61	.....
1900, .....	7	471 86	—20 03	.....
1901, .....	7	497 01	+25 15	+41 29

STEEL BILLETS, SLABS,  
BLOOMS, ETC.

1896, .....	4	446 83	.....	.....
1897, .....	4	493 33	+46 50	.....
1898, .....	4	591 97	+98 64	.....
1899, .....	4	688 03	+96 06	.....
1900, .....	4	646 80	—41 23	.....
1901, .....	4	768 14	+121 34	+321 31

## TOOL STEEL.

1896, .....	3	554 04	.....	.....
1897, .....	3	467 42	—86 62	.....
1898, .....	3	716 37	+248 95	.....
1899, .....	3	674 38	—41 90	.....
1900, .....	3	746 98	+72 60	.....
1901, .....	3	789 40	+42 42	+235 36

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earn- ings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
IRON AND STEEL FORGINGS.				
1896, .....	7	\$478 61	\$	\$
1897, .....	7	495 18	+16 57	.....
1898, .....	7	552 82	+57 64	.....
1899, .....	7	630 65	+77 83	.....
1900, .....	7	685 60	+54 95	.....
1901, .....	7	529 41	—156 19	+50 80
IRON SPECIALTIES.				
1896, .....	2	478 38	.....	.....
1897, .....	2	504 44	+26 06	.....
1898, .....	2	534 29	+29 85	.....
1899, .....	2	591 94	+57 65	.....
1900, .....	2	484 52	—107 42	.....
1901, .....	2	478 72	—5 80	+34
MALLEABLE IRON.				
1896, .....	4	450 75	.....	.....
1897, .....	4	460 86	+10 11	.....
1898, .....	4	473 67	+12 81	.....
1899, .....	4	507 05	+33 38	.....
1900, .....	4	518 54	+11 49	.....
1901, .....	4	493 18	—25 36	+42 43
BOLTS, NUTS, ETC.				
1896, .....	8	384 27	.....	.....
1897, .....	8	318 97	—65 30	.....
1898, .....	8	345 19	+26 22	.....



## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earn- ings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
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## BOLTS, NUTS, ETC.—Continued.

1899, .....	8	\$376 97	+\$31 78	\$
1900, .....	8	384 20	+7 23	.....
1901, .....	8	363 63	—20 57	—20 64

## WIRE NAILS AND RIVETS.

1896, .....	4	318 35	.....	.....
1897, .....	4	383 96	+65 61	.....
1898, .....	4	279 25	—104 71	.....
1899, .....	4	337 58	+58 33	.....
1900, .....	4	204 30	—133 28	.....
1901, .....	4	451 64	+247 34	+133 29

## TACKS AND SMALL NAILS.

1896, .....	4	289 18	.....	.....
1897, .....	4	278 53	—10 65	.....
1898, .....	4	360 04	+81 51	.....
1899, .....	4	344 68	—15 36	.....
1900, .....	4	319 02	—25 66	.....
1901, .....	4	350 11	+31 09	+60 93

## WIRE.

1896, .....	5	462 70	.....	.....
1897, .....	5	380 59	—82 11	.....
1898, .....	5	489 75	+109 16	.....
1899, .....	5	493 23	+3 48	.....
1900, .....	5	409 71	—83 52	.....
1901, .....	5	415 00	+5 29	—47 70

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earn- ings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
WIRE ROPE.				
1896, .....	2	\$443 72	\$	\$
1897, .....	2	450 67	+6 95	.....
1898, .....	2	467 67	+17 00	.....
1899, .....	2	488 00	+20 33	.....
1900, .....	2	481 04	—6 96	.....
1901, .....	2	431 76	—49 28	—11 96
WIRE GOODS.				
1896, .....	5	292 31	.....	.....
1897, .....	5	310 95	+18 64	.....
1898, .....	5	277 73	—33 22	.....
1899, .....	5	322 50	+44 77	.....
1900, .....	5	309 27	—13 23	.....
1901, .....	5	300 70	—8 57	+8 39
WAGON AND CARRIAGE AXLES AND SPRINGS.				
1896, .....	6	484 46	.....	.....
1897, .....	6	507 64	+23 18	.....
1898, .....	6	522 37	+14 73	.....
1899, .....	6	521 80	—57	.....
1900, .....	6	501 81	—19 99	.....
1901, .....	6	496 42	—5 39	+11 96
SCALES, ETC.				
1896, .....	4	588 94	.....	.....
1897, .....	4	567 09	—21 85	.....
1898, .....	4	566 12	—97	.....

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earn- ings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
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## SCALES, ETC.—Continued.

1899, .....	4	\$604 78	+\$38 66	\$
1900, .....	4	598 03	—6 75	.....
1901, .....	4	611 75	+13 72	+22 81

STOVES, RANGES, HEATERS,  
ETC.

1896, .....	37	471 97	.....	.....
1897, .....	37	465 01	—6 96	.....
1898, .....	37	483 58	+18 57	.....
1899, .....	37	535 27	+51 69	.....
1900, .....	37	565 89	+30 62	.....
1901, .....	37	552 39	—13 50	+80 42

## BATH BOILERS, TANKS, ETC.

1896, .....	2	465 04	.....	.....
1897, .....	2	446 36	—18 68	.....
1898, .....	2	425 34	—21 02	.....
1899, .....	2	432 18	+6 84	.....
1900, .....	2	442 21	+10 03	.....
1901, .....	2	455 23	+13 02	—9 81

## HARDWARE SPECIALTIES.

1896, .....	14	400 42	.....	.....
1897, .....	14	398 69	—1 73	.....
1898, .....	14	392 28	—6 41	.....
1899, .....	14	432 09	+39 87	.....
1900, .....	14	388 84	—43 25	.....
1901, .....	14	430 87	+42 03	+30 45

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earn- ings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
EDGE TOOLS.				
1896, .....	12	\$435 70	\$	\$
1897, .....	12	368 79	—66 91	.....
1898, .....	12	457 51	+88 72	.....
1899, .....	12	466 17	+8 66	.....
1900, .....	12	471 30	+5 13	.....
1901, .....	12	450 39	—20 91	+14 69
WRENCHES, PICKS, ETC.				
1896, .....	5	428 91	.....	.....
1897, .....	5	419 91	—9 00	.....
1898, .....	5	511 49	+91 58	.....
1899, .....	5	526 12	+14 63	.....
1900, .....	5	478 53	—47 59	.....
1901, .....	5	513 27	+34 74	+84 36
LOCOMOTIVES AND CARS BUILT AND REPAIRED.				
1896, .....	3	485 43	.....	.....
1897, .....	3	524 84	+39 41	.....
1898, .....	3	571 93	+47 09	.....
1899, .....	3	608 46	+36 53	.....
1900, .....	3	607 74	—72	.....
1901, .....	3	612 57	+4 83	+127 14
WROUGHT IRON PIPE AND TUBES.				
1896, .....	5	407 72	.....	.....
1897, .....	5	400 32	—7 40	.....
1898, .....	5	430 62	+30 30	.....

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earn- ings.	Increase(+) or decrease (--) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
WROUGHT IRON PIPE AND TUBES—Continued.				
1899, .....	5	\$521 62	+\$91 00	\$
1900, .....	5	475 17	—46 45	.....
1901, .....	5	502 18	+27 01	+94 46
CAST IRON PIPE.				
1896, .....	3	412 89	.....	.....
1897, .....	3	408 02	—4 87	.....
1898, .....	3	382 51	—25 51	.....
1899, .....	3	351 83	—30 68	.....
1900, .....	3	448 75	+96 92	.....
1901, .....	3	478 64	+29 89	+65 75
BRASS, COPPER AND BRONZE GOODS.				
1896, .....	19	410 25	.....	.....
1897, .....	19	407 11	—3 14	.....
1898, .....	19	433 80	+26 69	.....
1899, .....	19	438 92	+5 12	.....
1900, .....	19	469 50	+30 58	.....
1901, .....	19	480 62	+11 12	+70 37
IRON AND STEEL BRIDGES.				
1896, .....	7	504 77	.....	.....
1897, .....	7	479 88	—24 89	.....
1898, .....	7	455 14	—24 74	.....
1899, .....	7	430 21	—24 93	.....
1900, .....	7	553 36	+123 15	.....
1901, .....	7	566 83	+13 47	+62 06

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earn- ings.	Increase (+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease (—) 1901 as compared with 1896.
LOCOMOTIVES, STATIONERY ENGINES, ETC.				
1896, .....	9	\$561 53	\$	\$
1897, .....	9	536 69	—24 84	.....
1898, .....	9	572 26	+35 57	.....
1899, .....	9	586 63	+14 37	.....
1900, .....	9	606 05	+19 42	.....
1901, .....	9	625 27	+19 22	+63 74
ENGINES, BOILERS, ETC.				
1896, .....	10	522 13	.....	.....
1897, .....	10	497 57	—24 56	.....
1898, .....	10	523 57	+26 00	.....
1899, .....	10	548 08	+24 51	.....
1900, .....	10	551 89	+3 81	.....
1901, .....	10	562 88	+10 99	+40 75
CARS, SPRINGS, AXLES AND RAILWAY SUPPLIES.				
1896, .....	12	433 75	.....	.....
1897, .....	12	402 51	—31 24	.....
1898, .....	12	476 52	+74 01	.....
1899, .....	12	529 63	+53 11	.....
1900, .....	12	533 25	+3 62	.....
1901, .....	12	538 68	+5 43	+104 93
IRON VESSELS AND ENGINES.				
1896, .....	3	573 87	.....	.....
1897, .....	3	545 98	—27 89	.....



## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earn- ings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
IRON VESSELS AND ENGINES— Continued.				
1898, .....	3	\$535 08	—\$10 90	\$
1899, .....	3	554 00	+18 92	.....
1900, .....	3	529 91	—24 09	.....
1901, .....	3	572 32	+42 41	—1 55
BOILERS, TANKS, STACKS, ETC.				
1896, .....	21	467 08	.....	.....
1897, .....	21	474 32	+7 24	.....
1898, .....	21	461 68	—12 64	.....
1899, .....	21	479 58	+17 90	.....
1900, .....	21	462 16	—17 42	.....
1901, .....	21	496 49	+34 33	+29 41
MACHINERY.				
1896, .....	21	525 65	.....	.....
1897, .....	21	511 44	—14 21	.....
1898, .....	21	541 79	+30 35	.....
1899, .....	21	554 70	+12 91	.....
1900, .....	21	539 71	—14 99	.....
1901, .....	21	551 42	+11 71	+25 77
FOUNDRIES AND MACHINE SHOPS.				
1896, .....	25	450 22	.....	.....
1897, .....	25	473 93	+23 71	.....
1898, .....	25	483 99	+10 06	.....
1899, .....	25	505 84	+21 85	.....

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earn- ings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
FOUNDRIES AND MACHINE SHOPS—Continued.				
1900, .....	25	\$545 82	+\$39 98	\$
1901, .....	25	545 33	—49	+95 11
FILES, ETC.				
1896, .....	2	328 99	.....	.....
1897, .....	2	320 24	—8 75	.....
1898, .....	2	318 57	—1 67	.....
1899, .....	2	345 36	+26 79	.....
1900, .....	2	333 04	—12 32	.....
1901, .....	2	372 45	+39 41	+43 46
SAWS.				
1896, .....	3	459 73	.....	.....
1897, .....	3	431 14	—28 59	.....
1898, .....	3	488 06	+56 92	.....
1899, .....	3	512 77	+24 71	.....
1900, .....	3	573 36	+60 59	.....
1901, .....	3	583 70	+10 34	+123 97
PLUMBER SUPPLIES.				
1896, .....	3	436 32	.....	.....
1897, .....	3	409 55	—26 77	.....
1898, .....	3	448 67	+39 12	.....
1899, .....	3	480 71	+32 04	.....
1900, .....	3	481 57	+86	.....
1901, .....	3	486 09	+4 52	+49 77

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earn- ings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
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## ELECTRICAL SUPPLIES.

1896, .....	4	\$504 78	\$	\$
1897, .....	4	545 17	+40 39	.....
1898, .....	4	551 56	+6 39	.....
1899, .....	4	551 08	—48	.....
1900, .....	4	566 40	+15 32	.....
1901, .....	4	570 78	+4 38	+66 00

SHOVELS, SPADES, SCOOPS,  
ETC.

1896, .....	8	399 23	.....	.....
1897, .....	8	395 43	—3 80	.....
1898, .....	8	448 09	+52 66	.....
1899, .....	8	518 60	+70 51	.....
1900, .....	8	434 04	—84 56	.....
1901, .....	8	488 42	+54 38	+89 19

## SAFES AND VAULT DOORS.

1896, .....	2	426 22	.....	.....
1897, .....	2	479 25	+53 03	.....
1898, .....	2	504 23	+24 98	.....
1899, .....	2	499 71	—4 52	.....
1900, .....	2	442 19	—57 52	.....
1901, .....	2	454 60	+12 41	+28 38

## METAL AND METALLIC GOODS.

1896, .....	3	303 56	.....	.....
1897, .....	3	317 41	+13 85	.....

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYEES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earn- ings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
METAL AND METALLIC GOODS —Continued.				
1898, .....	3	\$329 26	+\$11 85	\$
1899, .....	3	397 20	+67 94	.....
1900, .....	3	390 76	—6 44	.....
1901, .....	3	464 93	+74 17	+161 37
BUILDING AND STRUCTURAL IRON WORK.				
1896, .....	2	508 18	.....	.....
1897, .....	2	520 31	+12 13	.....
1898, .....	2	525 02	+4 71	.....
1899, .....	2	530 60	+5 58	.....
1900, .....	2	523 93	—6 67	.....
1901, .....	2	524 78	+85	+16 60
IRON CHAINS.				
1896, .....	5	396 22	.....	.....
1897, .....	5	418 49	+22 27	.....
1898, .....	5	447 18	+28 69	.....
1899, .....	5	469 58	+22 40	.....
1900, .....	5	471 75	+2 17	.....
1901, .....	5	495 81	+24 06	+99 59
IRON FENCES AND RAILINGS.				
1896, .....	7	474 84	.....	.....
1897, .....	7	489 23	+14 39	.....
1898, .....	7	453 94	—35 29	.....
1899, .....	7	450 74	—3 20	.....
1900, .....	7	448 24	—2 50	.....
1901, .....	7	470 09	+21 85	—4 75

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earn- ings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
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## AGRICULTURAL IMPLEMENTS.

1896, .....	12	\$444 32	\$	\$
1897, .....	12	446 81	+2 49	.....
1898, .....	12	464 79	+17 98	.....
1899, .....	12	478 24	+13 45	.....
1900, .....	12	479 13	+89	.....
1901, .....	12	512 69	+33 56	+68 37

## STEAM PUMPS.

1896, .....	2	793 26	.....	.....
1897, .....	2	736 46	—56 80	.....
1898, .....	2	741 93	+5 47	.....
1899, .....	2	741 08	—85	.....
1900, .....	2	720 73	—20 35	.....
1901, .....	2	693 70	—27 03	—99 56

## BICYCLES.

1896, .....	3	527 63	.....	.....
1897, .....	3	609 59	+21 96	.....
1898, .....	3	440 23	—169 36	.....
1899, .....	3	428 90	—11 33	.....
1900, .....	3	382 78	—46 12	.....
1901, .....	3	569 78	+187 00	+42 15

## PIANOS AND ORGANS.

1896, .....	2	423 67	.....	.....
1897, .....	2	435 61	+11 94	.....
1898, .....	2	482 97	+47 36	.....

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earn- ings.	Increase (+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease (—) 1901 as compared with 1896.
1899, .....	2	\$458 35	—\$24 62	\$
1900, .....	2	433 17	—25 18	.....
1901, .....	2	436 40	+3 23	+2 73
TINWARE.				
1896, .....	5	378 66	.....	.....
1897, .....	5	388 75	+10 09	.....
1898, .....	5	370 93	—17 82	.....
1899, .....	5	430 58	+59 65	.....
1900, .....	5	411 90	—18 68	.....
1901, .....	5	368 95	—42 95	—9 71
PAPER MANUFACTORIES.				
1896, .....	8	381 90	.....	.....
1897, .....	8	399 01	+17 11	.....
1898, .....	8	399 06	+05	.....
1899, .....	8	409 03	+10 37	.....
1900, .....	8	441 85	+32 82	.....
1901, .....	8	428 12	—13 73	+46 22
WALL PAPER.				
1896, .....	4	320 63	.....	.....
1897, .....	4	325 57	+4 94	.....
1898, .....	4	346 77	+21 20	.....
1899, .....	4	358 45	+11 68	.....
1900, .....	4	424 44	+65 99	.....
1901, .....	4	423 29	—1 15	+102 66



## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earn- ings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
CIGARS.				
1896, .....	46	\$276 47	\$	\$
1897, .....	46	279 98	+3 51	.....
1898, .....	46	286 62	+6 64	.....
1899, .....	46	291 80	+5 18	.....
1900, .....	46	306 10	+14 30	.....
1901, .....	46	304 40	—1 70	+27 93
BOOK BINDING.				
1896, .....	3	470 70	.....	.....
1897, .....	3	484 51	+13 81	.....
1898, .....	3	482 65	—1 86	.....
1899, .....	3	490 44	+7 79	.....
1900, .....	3	524 27	+33 83	.....
1901, .....	3	551 69	+27 42	+80 99
CORDAGE ROPE AND TWINE.				
1896, .....	5	301 21	.....	.....
1897, .....	5	322 57	+21 36	.....
1898, .....	5	322 81	+24	.....
1899, .....	5	361 71	+38 90	.....
1900, .....	5	329 01	—32 70	.....
1901, .....	5	342 54	+13 53	+41 33
PAPER, PAPER BOXES, EN- VELOPES, ETC.				
1896, .....	27	270 89	.....	.....
1897, .....	27	267 51	—3 38	.....
1898, .....	27	229 67	—37 84	.....

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earn- ings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
PAPER, PAPER BOXES, ENVELOPES, ETC.—Continued.				
1899, .....	27	\$294 62	+\$64 95	\$
1900, .....	27	269 75	—24 87	.....
1901, .....	27	279 67	+9 92	+8 78
POTTERY.				
1896, .....	2	497 00	.....	.....
1897, .....	2	469 04	—27 96	.....
1898, .....	2	482 34	+13 30	.....
1899, .....	2	485 54	+3 20	.....
1900, .....	2	455 27	—30 27	.....
1901, .....	2	486 17	+30 90	—10 83
PAVING BRICK.				
1896, .....	7	326 54	.....	.....
1897, .....	7	335 67	+9 13	.....
1898, .....	7	331 42	—4 25	.....
1899, .....	7	334 91	+3 49	.....
1900, .....	7	404 88	+69 97	.....
1901, .....	7	374 08	—30 80	+47 54
BUILDING BRICK.				
1896, .....	35	341 66	.....	.....
1897, .....	35	355 21	+13 55	.....
1898, .....	35	343 00	—12 21	.....
1899, .....	35	365 77	+22 77	.....
1900, .....	35	365 53	—24	.....
1901, .....	35	375 55	+10 02	+33 89

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earn- ings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
FIRE BRICK.				
1896, .....	18	\$389 26	\$	\$
1897, .....	18	373 08	—16 18	.....
1898, .....	18	362 41	—10 67	.....
1899, .....	18	384 59	+22 18	.....
1900, .....	18	419 15	+34 56	.....
1901, .....	18	428 42	+9 27	+39 16
SLATE ROOFING, ETC., TON- NAGE.				
1896, .....	6	303 61	.....	.....
1897, .....	6	325 78	+22 17	.....
1898, .....	6	328 38	+2 60	.....
1899, .....	6	330 23	+1 85	.....
1900, .....	6	366 58	+36 35	.....
1901, .....	6	399 15	+32 57	+95 54
SLATE ROOFING, ETC., SQUARES.				
1896, .....	14	316 89	.....	.....
1897, .....	14	320 95	+4 06	.....
1898, .....	14	251 97	—68 98	.....
1899, .....	14	351 13	—84	.....
1900, .....	14	362 58	+11 45	.....
1901, .....	14	390 16	+27 58	+73 27
WINDOW GLASS, BOTTLES AND TABLE GOODS.				
1896, .....	22	378 38	.....	.....
1897, .....	22	418 31	+39 93	.....

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earn- ings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
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WINDOW GLASS, BOTTLES AND  
TABLE GOODS—Continued.

1898, .....	22	\$441 16	+\$22 85	\$
1899, .....	22	464 80	+23 64	.....
1900, .....	22	459 71	—5 09	.....
1901, .....	22	450 28	—9 43	+71 90

GLAZED AND CHROME KID.

1896, .....	7	353 15	.....	.....
1897, .....	7	394 82	+41 67	.....
1898, .....	7	393 26	—1 56	.....
1899, .....	7	414 94	+21 68	.....
1900, .....	7	396 28	—18 66	.....
1901, .....	7	441 41	+45 13	+88 26

MEN'S, WOMEN'S, MISSES AND  
CHILDREN'S SHOES.

1896, .....	15	345 17	.....	.....
1897, .....	15	355 95	+10 78	.....
1898, .....	15	359 34	+3 39	.....
1899, .....	15	382 98	+23 64	.....
1900, .....	15	374 94	—8 04	.....
1901, .....	15	382 24	+7 30	+37 07

SUSPENDERS.

1896, .....	2	281 24	.....	.....
1897, .....	2	282 80	+1 56	.....
1898, .....	2	322 83	+40 03	.....
1899, .....	2	377 47	+54 64	.....

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earn- ings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
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## SUSPENDERS—Continued.

1900, .....	2	\$359 67	—\$17 80	\$
1901, .....	2	310 10	+49 57	+28 86

## HATS AND CAPS.

1896, .....	3	296 23	.....	.....
1897, .....	3	366 74	+70 51	.....
1898, .....	3	314 97	--51 77	.....
1899, .....	3	342 69	+27 72	.....
1900, .....	3	345 15	+2 46	.....
1901, .....	3	354 41	+9 26	+58 18

## FUR AND FELT HATS.

1896, .....	4	399 97	.....	.....
1897, .....	4	491 08	+91 11	.....
1898, .....	4	473 42	—17 66	.....
1899, .....	4	471 17	—2 25	.....
1900, .....	4	479 23	+8 06	.....
1901, .....	4	476 02	—3 21	+76 05

## WOOL HATS.

1896, .....	7	318 46	.....	.....
1897, .....	7	320 08	+1 62	.....
1898, .....	7	293 28	—26 80	.....
1899, .....	7	303 84	+10 56	.....
1900, .....	7	386 29	+82 45	.....
1901, .....	7	349 06	—37 21	+30 60

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earn- ings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
UMBRELLAS AND PARASOLS.				
1896, .....	4	\$231 65	\$	\$
1897, .....	4	296 53	+54 88	.....
1898, .....	4	268 57	—27 96	.....
1899, .....	4	272 41	+3 84	.....
1900, .....	4	267 00	—5 41	.....
1901, .....	4	276 66	+9 66	+45 01
DRESS TRIMMINGS, BRAIDS, ETC.				
1896, .....	8	270 87	.....	.....
1897, .....	8	272 97	+2 10	.....
1898, .....	8	267 84	—5 13	.....
1899, .....	8	272 55	+4 71	.....
1900, .....	8	305 73	+33 18	.....
1901, .....	8	296 18	—9 55	+25 31
SHIRTS AND SHIRT WAISTS.				
1896, .....	9	292 33	.....	.....
1897, .....	9	271 95	—20 38	.....
1898, .....	9	270 51	—1 44	.....
1899, .....	9	299 52	+29 01	.....
1900, .....	9	313 80	+14 28	.....
1901, .....	9	320 15	+6 35	+27 82
NECKWEAR.				
1896, .....	3	383 74	.....	.....
1897, .....	3	362 00	—21 74	.....
1898, .....	3	376 91	+14 91	.....



## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earn- ings.	Increase(+) or decrease (-) as com- pared with the preced- ing year.	Increase (+) or de- crease(-) 1901 as compared with 1896.
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## NECKWEAR—Continued.

1899, .....	3	\$378 89	+\$1 98	\$
1900, .....	3	366 39	—12 50	.....
1901, .....	3	317 06	—49 33	—66 68

## COTTON AND WOOLEN CLOTHS.

1896, .....	24	317 82	.....	.....
1897, .....	24	345 80	+27 98	.....
1898, .....	24	349 94	+4 14	.....
1899, .....	24	372 47	+22 53	.....
1900, .....	24	348 40	—24 07	.....
1901, .....	24	351 78,	+3 38	+33 96

## CARPETS.

1896, .....	17	346 63	.....	.....
1897, .....	17	364 98	+18 35	.....
1898, .....	17	362 75	—2 23	.....
1899, .....	17	415 59	+52 84	.....
1900, .....	17	416 14	+55	.....
1901, .....	17	447 98	+31 84	+101 35

## COTTON GOODS.

1896, .....	16	282 91	.....	.....
1897, .....	16	312 65	+29 74	.....
1898, .....	16	320 93	+8 28	.....
1899, .....	16	335 05	+14 12	.....
1900, .....	16	344 97	+9 92	.....
1901, .....	16	336 00	—8 97	+53 09

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earn- ings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
WOOLEN AND WORSTED CAS- SIMERES.				
1896, .....	11	\$305 88	\$	\$
1897, .....	11	332 92	+27 04	.....
1898, .....	11	332 52	—40	.....
1899, .....	11	349 24	+16 72	.....
1900, .....	11	358 77	+9 53	.....
1901, .....	11	352 17	—6 60	+46 29
WOOLEN AND WORSTED FABRICS.				
1896, .....	16	283 21	.....	.....
1897, .....	16	316 01	+32 80	.....
1898, .....	16	346 81	+30 80	.....
1899, .....	16	356 76	+9 95	.....
1900, .....	16	346 26	—10 50	.....
1901, .....	16	345 63	—63	+62 42
WOOLEN AND WORSTED YARNS.				
1896, .....	12	269 36	.....	.....
1897, .....	12	320 70	+51 34	.....
1898, .....	12	313 57	—7 13	.....
1899, .....	12	361 57	+48 00	.....
1900, .....	12	323 61	—37 96	.....
1901, .....	12	349 14	+25 53	+79 78
RUGS, YARNS, ETC.				
1896, .....	5	322 64	.....	.....
1897, .....	5	320 50	—2 14	.....

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earn- ings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
RUGS, YARNS, ETC.—Continued.				
1898, .....	5	\$340 57	+\$20 07	\$
1899, .....	5	381 45	+40 88	.....
1900, .....	5	370 22	—11 23	.....
1901, .....	5	367 64	—2 58	+45 00
CARPET YARNS.				
1896, .....	11	335 80	.....	.....
1897, .....	11	373 10	+37 30	.....
1898, .....	11	333 13	—39 97	.....
1899, .....	11	382 96	+49 83	.....
1900, .....	11	364 79	—18 17	.....
1901, .....	11	386 01	+21 22	+50 21
COTTON YARNS.				
1896, .....	7	271 90	.....	.....
1897, .....	7	280 68	+8 78	.....
1898, .....	7	300 77	+20 09	.....
1899, .....	7	305 36	+4 59	.....
1900, .....	7	301 08	—4 28	.....
1901, .....	7	318 39	+17 31	+46 49
WORSTED WOOLEN AND COT- TON YARNS.				
1896, .....	10	283 14	.....	.....
1897, .....	10	299 96	+16 82	.....
1898, .....	10	282 51	—17 45	.....
1899, .....	10	344 21	+61 70	.....

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earn- ings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
WORSTED, WOOLEN AND COT- TON YARNS—Continued.				
1900, .....	10	\$295 67	—\$48 54	\$
1901, .....	10	270 60	—25 07	—12 54
WOOLEN BLANKETS, FLAN- NELS, ETC.				
1896, .....	5	358 52	.....	.....
1897, .....	5	367 74	+9 22	.....
1898, .....	5	329 54	—38 20	.....
1899, .....	5	333 27	+3 73	.....
1900, .....	5	362 09	+28 82	.....
1901, .....	5	328 39	—33 70	—30 13
LACE GOODS.				
1896, .....	3	253 95	.....	.....
1897, .....	3	261 33	+7 38	.....
1898, .....	3	277 11	+15 78	.....
1899, .....	3	285 65	+8 54	.....
1900, .....	3	297 73	+12 08	.....
1901, .....	3	309 96	+12 23	+56 01
CHENILLE GOODS.				
1896, .....	3	226 95	.....	.....
1897, .....	3	253 33	+26 38	.....
1898, .....	3	285 54	+32 21	.....
1899, .....	3	338 77	+53 23	.....
1900, .....	3	384 81	+46 04	.....
1901, .....	3	398 32	+13 51	+171 37

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earnings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
UPHOLSTERY GOODS.				
1896, .....	10	\$348 00	\$	\$
1897, .....	10	371 79	+23 79	.....
1898, .....	10	398 38	+26 59	.....
1899, .....	10	404 63	+6 25	.....
1900, .....	10	395 86	—8 77	.....
1901, .....	10	412 76	+16 90	+64 76
KNIT GOODS, UNDERWEAR.				
1896, .....	13	262 29	.....	.....
1897, .....	13	262 28	—01	.....
1898, .....	13	267 35	+5 07	.....
1899, .....	13	276 14	+8 79	.....
1900, .....	13	254 73	—21 41	.....
1901, .....	13	257 27	+2 54	—5 02
HOSIERY.				
1896, .....	31	237 59	.....	.....
1897, .....	31	245 66	+8 07	.....
1898, .....	31	250 73	+5 07	.....
1899, .....	31	262 05	+11 32	.....
1900, .....	31	272 54	+10 49	.....
1901, .....	31	277 47	+4 93	+39 88
SILK—BROAD GOODS, THROWN SILK, YARNS, ETC.				
1896, .....	6	252 46	.....	.....
1897, .....	6	228 95	—23 51	.....

## AVERAGE YEARLY EARNINGS—Continued.

COMPARISON OF AVERAGE YEARLY EARNINGS OF EMPLOYES,  
SKILLED AND UNSKILLED—SAME ESTABLISHMENTS, FOR THE  
YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average yearly earnings.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1900 as compared with 1896.
1898, .....	6	\$239 40	+\$10 45	\$
1899, .....	6	267 49	+28 09	.....
1900, .....	6	236 50	—30 99	.....
1901, .....	6	219 74	—16 76	—32 72
SILK—BROAD GOODS AND RIB- BONS.				
1896, .....	2	250 25	.....	.....
1897, .....	2	233 02	—17 23	.....
1898, .....	2	234 57	+1 55	.....
1899, .....	2	261 31	+26 74	.....
1900, .....	2	265 71	+4 40	.....
1901, .....	2	226 18	—39 53	—24 07
SILK—RIBBONS.				
1896, .....	4	291 88	.....	.....
1897, .....	4	350 45	+58 57	.....
1898, .....	4	336 36	—14 09	.....
1899, .....	4	338 22	+1 86	.....
1900, .....	4	304 04	—34 18	.....
1901, .....	4	345 09	+41 05	+53 21



# AVERAGE DAILY WAGE.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

NOTE.—In this table the average daily wage of employes, skilled and unskilled, in the same establishments for the years 1896, 1897, 1898, 1899, 1900 and 1901 is presented, with the relative increase or decrease, together with the increase or decrease 1901 over 1896. Eighty-eight industries, representing 801 establishments, are considered.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896
STEEL CASTINGS.			Cts.	Cts.
1896, .....	7	\$1 54	.....	.....
1897, .....	7	1 44	—13	.....
1898, .....	7	1 46	+02	.....
1899, .....	7	1 63	+17	.....
1900, .....	7	1 54	—09	.....
1901, .....	7	1 65	+11	+11
STEEL BILLETS, SLABS, BLOOMS, ETC.				
1896, .....	4	2 19	.....	.....
1897, .....	4	1 70	—49	.....
1898, .....	4	2 67	+37	.....
1899, .....	4	2 33	+26	.....
1900, .....	4	2 63	+30	.....
1901, .....	4	2 65	+02	+46
TOOL STEEL.				
1896, .....	3	2 08	.....	.....
1897, .....	3	1 93	—15	.....
1898, .....	3	2 30	+37	.....
1899, .....	3	2 32	+02	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
TOOL STEEL—Continued.			Cts.	Cts.
1900, .....	3	\$2 56	+24	.....
1901, .....	3	2 68	+12	+60
IRON AND STEEL FORGINGS.				
1896, .....	7	1 87	.....	.....
1897, .....	7	1 76	—11	.....
1898, .....	7	1 89	+13	.....
1899, .....	7	2 10	+21	.....
1900, .....	7	2 35	+25	.....
1901, .....	7	1 90	—45	+03
IRON SPECIALTIES.				
1896, .....	2	1 59	.....	.....
1897, .....	2	1 68	+09	.....
1898, .....	2	1 77	+09	.....
1899, .....	2	1 97	+20	.....
1900, .....	2	1 61	—36	.....
1901, .....	2	1 59	—02	.....
MALLEABLE IRON.				
1896, .....	4	1 54	.....	.....
1897, .....	4	1 58	+04	.....
1898, .....	4	1 59	+01	.....
1899, .....	4	1 70	+11	.....
1900, .....	4	1 78	+08	.....
1901, .....	4	1 72	—06	+18

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
BOLTS, NUTS, ETC.			Cts.	Cts.
1896, .....	8	\$1 64	.....	.....
1897, .....	8	1 22	—42	.....
1898, .....	8	1 26	+04	.....
1899, .....	8	1 33	+07	.....
1900, .....	8	1 32	—01	.....
1901, .....	8	1 19	—13	—45
WIRE NAILS AND RIVETS.				
1896, .....	4	1 32	.....	.....
1897, .....	4	1 54	+22	.....
1898, .....	4	1 48	—06	.....
1899, .....	4	2 38	+90	.....
1900, .....	4	1 76	—62	.....
1901, .....	4	1 50	—26	+18
TACKS AND SMALL NAILS.				
1896, .....	4	1 28	.....	.....
1897, .....	4	1 33	+05	.....
1898, .....	4	1 45	+12	.....
1899, .....	4	1 23	—22	.....
1900, .....	4	1 26	+03	.....
1901, .....	4	1 25	—01	—03
WIRE.				
1896, .....	5	1 62	.....	.....
1897, .....	5	1 44	—18	.....
1898, .....	5	1 54	+10	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
WIRE—Continued.			Cts.	Cts.
1899, .....	5	\$1 53	—01	.....
1900, .....	5	1 36	—17	.....
1901, .....	5	1 37	+01	—25
WIRE ROPE.				
1896, .....	2	1 47	.....	.....
1897, .....	2	1 49	+02	.....
1898, .....	2	1 54	+05	.....
1899, .....	2	1 61	+07	.....
1900, .....	2	1 57	—04	.....
1901, .....	2	1 40	—17	—07
WIRE GOODS.				
1896, .....	5	99	.....	.....
1897, .....	5	1 03	+04	.....
1898, .....	5	92	—11	.....
1899, .....	5	1 07	+15	.....
1900, .....	5	1 03	—04	.....
1901, .....	5	1 02	—01	+03
WAGON AND CARRIAGE AXLES AND SPRINGS.				
1896, .....	6	1 90	.....	.....
1897, .....	6	1 84	—06	.....
1898, .....	6	1 81	—03	.....
1899, .....	6	1 83	+02	.....
1900, .....	6	1 80	—03	.....
1901, .....	6	1 79	—01	—11

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
SCALES, ETC.			Cts.	Cts.
1896, .....	4	\$2 13	.....	.....
1897, .....	4	1 99	—14	.....
1898, .....	4	1 93	—06	.....
1899, .....	4	2 00	+07	.....
1900, .....	4	2 01	+01	.....
1901, .....	4	2 09	+08	—04
STOVES, RANGES, HEATERS, ETC.				
1896, .....	37	2 26	.....	.....
1897, .....	37	2 04	—22	.....
1898, .....	37	2 04	.....	.....
1899, .....	37	2 11	+07	.....
1900, .....	37	2 31	+20	.....
1901, .....	37	2 22	—09	—04
BATH BOILERS, TANKS, ETC.				
1896, .....	2	1 50	.....	.....
1897, .....	2	1 46	—04	.....
1898, .....	2	1 41	—05	.....
1899, .....	2	1 42	+01	.....
1900, .....	2	1 44	+02	.....
1901, .....	2	1 50	+06	.....
HARDWARE SPECIALTIES.				
1896, .....	14	1 54	.....	.....
1897, .....	14	1 48	—06	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
HARDWARE SPECIALTIES— Continued.				
			Cts.	Cts.
1898, .....	14	\$1 53	+05	.....
1899, .....	14	1 54	+01	.....
1900, .....	14	1 56	+02	.....
1901, .....	14	1 46	—10	—08
EDGE TOOLS.				
1896, .....	12	1 77	.....	.....
1897, .....	12	1 62	—15	.....
1898, .....	12	1 57	—05	.....
1899, .....	12	1 59	+02	.....
1900, .....	12	1 59	.....	.....
1901, .....	12	1 52	—07	—25
WRENCHES, PICKS, ETC.				
1896, .....	5	1 79	.....	.....
1897, .....	5	1 58	—21	.....
1898, .....	5	1 88	+30	.....
1899, .....	5	1 80	—08	.....
1900, .....	5	1 71	—09	.....
1901, .....	5	1 83	+12	+04
LOCOMOTIVES AND CARS BUILT AND REPAIRED.				
1896, .....	3	1 78	.....	.....
1897, .....	3	1 86	+08	.....
1898, .....	3	1 93	+07	.....
1899, .....	3	2 00	+07	.....



## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
LOCOMOTIVES AND CARS BUILT AND REPAIRED—Con- tinued.				
			Cts.	Cts.
1900, .....	3	\$2 01	+01	.....
1901, .....	3	2 02	+01	+24
WROUGHT IRON PIPE AND TUBES.				
1896, .....	5	1 44	.....	.....
1897, .....	5	1 34	—10	.....
1898, .....	5	1 42	+08	.....
1899, .....	5	1 94	+52	.....
1900, .....	5	1 79	—15	.....
1901, .....	5	1 77	—02	+33
CAST IRON PIPE.				
1896, .....	3	1 37	.....	.....
1897, .....	3	1 35	—02	.....
1898, .....	3	1 29	—06	.....
1899, .....	3	1 40	+11	.....
1900, .....	3	1 47	+07	.....
1901, .....	3	1 52	+05	+15
BRASS, COPPER AND BRONZE GOODS.				
1896, .....	19	1 39	.....	.....
1897, .....	19	1 38	—01	.....
1898, .....	19	1 46	+08	.....
1899, .....	19	1 45	—01	.....
1900, .....	19	1 57	+12	.....
1901, .....	19	1 58	+01	+19

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
IRON AND STEEL BRIDGES.			Cts.	Cts.
1896, .....	7	\$1 72	.....	.....
1897, .....	7	1 61	—11	.....
1898, .....	7	1 51	—10	.....
1899, .....	7	1 54	+03	.....
1900, .....	7	1 84	+30	.....
1901, .....	7	1 83	—01	+11
LOCOMOTIVES, STATIONARY ENGINES, ETC.				
1896, .....	9	1 84	.....	.....
1897, .....	9	1 75	—09	.....
1898, .....	9	1 88	+13	.....
1899, .....	9	1 91	+03	.....
1900, .....	9	1 97	+06	.....
1901, .....	9	2 06	+09	+22
ENGINES, BOILERS, ETC.				
1896, .....	10	1 77	.....	.....
1897, .....	10	1 69	—08	.....
1898, .....	10	1 72	+03	.....
1899, .....	10	1 82	+10	.....
1900, .....	10	1 80	—02	.....
1901, .....	10	1 86	+06	+09
CARS, SPRINGS, AXLES AND RAILWAY SUPPLIES.				
1896, .....	12	1 67	.....	.....
1897, .....	12	1 44	—23	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
CAR SPRINGS, AXLES AND RAILWAY SUPPLIES—Contin- ued.				
			Cts.	Cts.
1898, .....	12	\$1 61	+17	.....
1899, .....	12	1 71	+10	.....
1900, .....	12	1 71	.....	.....
1901, .....	12	1 77	+06	+10
IRON VESSELS AND ENGINES.				
1896, .....	3	1 88	.....	.....
1897, .....	3	1 79	—09	.....
1898, .....	3	1 76	—03	.....
1899, .....	3	1 87	+11	.....
1900, .....	3	1 81	—06	.....
1901, .....	3	1 73	—08	—15
BOILERS, TANKS, STACKS, ETC.				
1896, .....	21	1 63	.....	.....
1897, .....	21	1 66	+03	.....
1898, .....	21	1 59	—07	.....
1899, .....	21	1 58	—01	.....
1900, .....	21	1 52	—06	.....
1901, .....	21	1 66	+14	+03
MACHINERY.				
1896, .....	21	1 75	.....	.....
1897, .....	21	1 66	—09	.....
1898, .....	21	1 81	+15	.....
1899, .....	21	1 84	+03	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
MACHINERY—Continued.			Cts.	Cts.
1900, .....	21	\$1 79	—05	.....
1901, .....	21	1 80	+01	+05
FOUNDRIES AND MACHINE SHOPS.				
1896, .....	25	1 57	.....	.....
1897, .....	25	1 61	+04	.....
1898, .....	25	1 63	+02	.....
1899, .....	25	1 66	+03	.....
1900, .....	25	1 82	+16	.....
1901, .....	25	1 80	—02	+23
FILES, ETC.				
1896, .....	2	1 20	.....	.....
1897, .....	2	1 20	.....	.....
1898, .....	2	1 15	—15	.....
1899, .....	2	1 14	—01	.....
1900, .....	2	1 14	.....	.....
1901, .....	2	1 29	+15	+09
SAWS.				
1896, .....	3	2 01	.....	.....
1897, .....	3	2 05	+04	.....
1898, .....	3	2 00	—05	.....
1899, .....	3	2 05	+05	.....
1900, .....	3	2 04	—01	.....
1901, .....	3	2 03	—01	+02

AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
PLUMBER SUPPLIES.			Cts.	Cts.
1896, .....	3	\$1 55	.....	.....
1897, .....	3	1 52	—03	.....
1898, .....	3	1 55	+03	.....
1899, .....	3	1 54	—01	.....
1900, .....	3	1 54	.....	.....
1901, .....	3	1 46	—08	—09
ELECTRICAL SUPPLIES.				
1896, .....	4	1 75	.....	.....
1897, .....	4	1 84	+09	.....
1898, .....	4	1 83	—01	.....
1899, .....	4	1 82	—01	.....
1900, .....	4	1 91	+09	.....
1901, .....	4	1 90	—01	+15
SHOVELS, SPADES, SCOOPS, ETC.				
1896, .....	8	1 90	.....	.....
1897, .....	8	1 91	—09	.....
1898, .....	8	1 82	+01	.....
1899, .....	8	1 85	+03	.....
1900, .....	8	1 72	—13	.....
1901, .....	8	1 73	+01	—17
SAFES AND VAULT DOORS.				
1896, .....	2	1 39	.....	.....
1897, .....	2	1 59	+20	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
SAFES AND VAULT DOORS— Continued.				
			Cts.	Cts.
1898, .....	2	\$1 69	+10	.....
1899, .....	2	1 70	+01	.....
1900, .....	2	1 52	—18	.....
1901, .....	2	1 50	—02	+11
METAL AND METALLIC GOODS.				
1896, .....	3	1 29	.....	.....
1897, .....	3	1 23	—06	.....
1898, .....	3	1 29	+06	.....
1899, .....	3	1 50	+21	.....
1900, .....	3	1 42	—08	.....
1901, .....	3	1 58	+16	+29
BUILDING AND STRUCTURAL IRON WORK.				
1896, .....	2	1 60	.....	.....
1897, .....	2	1 72	+12	.....
1898, .....	2	1 71	—01	.....
1899, .....	2	1 74	+03	.....
1900, .....	2	1 71	—03	.....
1901, .....	2	1 72	+01	+12
IRON CHAINS.				
1896, .....	5	1 50	.....	.....
1897, .....	5	1 54	+04	.....
1898, .....	5	1 50	—04	.....



## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
IRON CHAINS—Continued.			Cts.	Cts.
1899, .....	5	\$1 59	+09	.....
1900, .....	5	1 87	+28	.....
1901, .....	5	1 71	—16	+21
IRON FENCES AND RAILINGS.				
1896, .....	7	1 62	.....	.....
1897, .....	7	1 64	+02	.....
1898, .....	7	1 49	—15	.....
1899, .....	7	1 49	.....	.....
1900, .....	7	1 47	—02	.....
1901, .....	7	1 54	+07	—08
AGRICULTURAL IMPLEMENTS.				
1896, .....	12	1 55	.....	.....
1897, .....	12	1 53	—02	.....
1898, .....	12	1 55	+02	.....
1899, .....	12	1 61	+06	.....
1900, .....	12	1 60	—01	.....
1901, .....	12	1 70	+10	+15
STEAM PUMPS.				
1896, .....	2	2 58	.....	.....
1897, .....	2	2 40	—18	.....
1898, .....	2	2 44	+04	.....
1899, .....	2	2 46	+02	.....
1900, .....	2	2 39	—07	.....
1901, .....	2	2 30	—09	—28

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
BICYCLES.			Cts.	Cts.
1896, .....	3	\$1 91	.....	.....
1897, .....	3	2 05	+14	.....
1898, .....	3	1 63	—42	.....
1899, .....	3	1 61	—02	.....
1900, .....	3	1 62	+01	.....
1901, .....	3	2 08	+46	+17
PIANOS AND ORGANS.				
1896, .....	2	1 56	.....	.....
1897, .....	2	1 49	—07	.....
1898, .....	2	1 64	+15	.....
1899, .....	2	1 56	—08	.....
1900, .....	2	1 48	—08	.....
1901, .....	2	1 48	.....	—08
TINWARE.				
1896, .....	5	1 26	.....	.....
1897, .....	5	1 29	+03	.....
1898, .....	5	1 24	—05	.....
1899, .....	5	1 43	+19	.....
1900, .....	5	1 37	—06	.....
1901, .....	5	1 36	—01	+10
PAPER MANUFACTORIES.				
1896, .....	8	1 46	.....	.....
1897, .....	8	1 44	—02	.....
1898, .....	8	1 41	—03	.....

## AVERAGE DAILY WAGE—Continued

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
PAPER MANUFACTORIES—Con- tinued.				
			Cts.	Cts.
1899, .....	8	\$1 44	+03	.....
1900, .....	8	1 49	+05	.....
1901, .....	8	1 46	—03	.....
WALL PAPER.				
1896, .....	4	1 24	.....	.....
1897, .....	4	1 15	—09	.....
1898, .....	4	1 22	+07	.....
1899, .....	4	1 27	+05	.....
1900, .....	4	1 51	+24	.....
1901, .....	4	1 48	—03	+24
CIGARS.				
1896, .....	46	96	.....	.....
1897, .....	46	96	.....	.....
1898, .....	46	98	+02	.....
1899, .....	46	99	+01	.....
1900, .....	46	1 04	+05	.....
1901, .....	46	1 03	—01	+07
BOOK BINDING.				
1896, .....	3	1 56	.....	.....
1897, .....	3	1 73	+17	.....
1898, .....	3	1 70	—03	.....
1899, .....	3	1 75	+05	.....
1900, .....	3	1 82	+07	.....
1901, .....	3	1 90	+08	+34

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments considered.	Average daily wage.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
CORDAGE, ROPE AND TWINE,			Cts.	Cts.
1896, .....	5	\$1 05	.....	.....
1897, .....	5	1 02	—03	.....
1898, .....	5	1 03	+01	.....
1899, .....	5	1 16	+13	.....
1900, .....	5	1 09	—07	.....
1901, .....	5	1 14	+05	+09
PAPER, PAPER BOXES, ENVELOPES, ETC.				
1896, .....	27	91	.....	.....
1897, .....	27	89	—02	.....
1898, .....	27	76	—13	.....
1899, .....	27	97	+21	.....
1900, .....	27	93	—07	.....
1901, .....	27	93	+03	+02
POTTERY.				
1896, .....	2	1 64	.....	.....
1897, .....	2	1 63	—01	.....
1898, .....	2	1 66	+03	.....
1899, .....	2	1 63	—03	.....
1900, .....	2	1 58	—05	.....
1901, .....	2	1 60	+02	—04
PAVING BRICK.				
1896, .....	7	1 28	.....	.....
1897, .....	7	1 36	+08	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
PAVING BRICK—Continued.			Cts.	Cts.
1898, .....	7	\$1 36	—01	.....
1899, .....	7	1 45	+10	.....
1900, .....	7	1 50	+05	.....
1901, .....	7	1 60	+10	+32
BUILDING BRICK.				
1896, .....	35	1 49	.....	.....
1897, .....	35	1 56	+07	.....
1898, .....	35	1 57	+01	.....
1899, .....	35	1 66	+09	.....
1900, .....	35	1 69	+03	.....
1901, .....	35	1 63	—06	+14
FIRE BRICK.				
1896, .....	18	1 37	.....	.....
1897, .....	18	1 33	—04	.....
1898, .....	18	1 49	+16	.....
1899, .....	18	1 55	+06	.....
1900, .....	18	1 40	—15	.....
1901, .....	18	1 44	+04	+07
SLATE ROOFING, ETC., TON- NAGE.				
1896, .....	6	1 33	.....	.....
1897, .....	6	1 44	+11	.....
1898, .....	6	1 34	—10	.....
1899, .....	6	1 40	+06	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
SLATE ROOFING, ETC., TON- NAGE—Continued.				
			Cts.	Cts.
1900, .....	6	\$1 44	+04	.....
1901, .....	6	1 49	+05	+16
SLATE ROOFING, ETC., SQUARES.				
1896, .....	14	1 33	.....	.....
1897, .....	14	1 34	+01	.....
1898, .....	14	1 42	+08	.....
1899, .....	14	1 43	+01	.....
1900, .....	14	1 48	+05	.....
1901, .....	14	1 54	+06	+21
WINDOW GLASS, BOTTLES AND TABLE GOODS.				
1896, .....	22	1 58	.....	.....
1897, .....	22	1 59	+01	.....
1898, .....	22	1 60	+01	.....
1899, .....	22	1 64	+04	.....
1900, .....	22	1 73	+09	.....
1901, .....	22	1 76	+03	+18
GLAZED AND CHROME KID.				
1896, .....	7	1 18	.....	.....
1897, .....	7	1 31	+13	.....
1898, .....	7	1 32	+01	.....
1899, .....	7	1 38	+06	.....
1900, .....	7	1 47	+09	.....
1901, .....	7	1 48	+01	+30



## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
MEN'S, WOMEN'S, MISSES' AND CHILDREN'S SHOES.				
			Cts.	Cts.
1896, .....	15	\$1 23	.....	.....
1897, .....	15	1 22	—01	.....
1898, .....	15	1 25	+03	.....
1899, .....	15	1 29	+04	.....
1900, .....	15	1 27	—02	.....
1901, .....	15	1 28	+01	+05
SUSPENDERS.				
1896, .....	2	95	.....	.....
1897, .....	2	70	—25	.....
1898, .....	2	1 09	+39	.....
1899, .....	2	1 26	+17	.....
1900, .....	2	1 21	—05	.....
1901, .....	2	1 04	—17	+09
HATS AND CAPS.				
1896, .....	3	1 22	.....	.....
1897, .....	3	1 27	+05	.....
1898, .....	3	1 10	—17	.....
1899, .....	3	1 21	+11	.....
1900, .....	3	1 22	+01	.....
1901, .....	3	1 23	+01	+01
FUR AND FELT HATS.				
1896, .....	4	1 30	.....	.....
1897, .....	4	1 59	+29	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896
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FUR AND FELT HATS—Con-  
tinued.

			Cts.	Cts.
1896, .....	4	\$1 54	—05	.....
1897, .....	4	1 52	—02	.....
1898, .....	4	1 55	+03	.....
1901, .....	4	1 55	.....	+25

## WOOL HATS.

1896, .....	7	1 16	.....	.....
1897, .....	7	1 23	+07	.....
1898, .....	7	1 05	—18	.....
1899, .....	7	1 14	+09	.....
1900, .....	7	1 31	+17	.....
1901, .....	7	1 24	—07	+08

## UMBRELLAS AND PARASOLS.

1896, .....	4	75	.....	.....
1897, .....	4	97	+22	.....
1898, .....	4	87	—10	.....
1899, .....	4	89	+02	.....
1900, .....	4	87	—02	.....
1901, .....	4	90	+03	+15

DRESS TRIMMINGS, BRAIDS,  
ETC.

1896, .....	8	94	.....	.....
1897, .....	8	93	—01	.....
1898, .....	8	90	—03	.....
1899, .....	8	91	+01	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
DRESS TRIMMINGS BRAIDS, ETC.—Continued.				
			Cts.	Cts.
1900, .....	8	\$1 01	+10	.....
1901, .....	8	1 01	.....	+06
SHIRT AND SHIRT WAISTS,				
1896, .....	9	1 02	.....	.....
1897, .....	9	91	—11	.....
1898, .....	9	91	.....	.....
1899, .....	9	1 01	+10	.....
1900, .....	9	1 05	+04	.....
1901, .....	9	1 07	+02	+05
NECKWEAR.				
1896, .....	3	1 25	.....	.....
1897, .....	3	1 18	—07	.....
1898, .....	3	1 22	+04	.....
1899, .....	3	1 23	+01	.....
1900, .....	3	1 19	—04	.....
1901, .....	3	1 03	—16	—22
COTTON AND WOOLEN CLOTHS.				
1896, .....	24	1 18	.....	.....
1897, .....	24	1 21	+03	.....
1898, .....	24	1 32	+11	.....
1899, .....	24	1 36	+04	.....
1900, .....	24	1 25	—11	.....
1901, .....	24	1 26	+01	+08

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tab- lish- ments con- sidered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
CARPETS.			Cts.	Cts.
1896, .....	17	\$1 31	.....	.....
1897, .....	17	1 25	—06	.....
1898, .....	17	1 24	—01	.....
1899, .....	17	1 37	+13	.....
1900, .....	17	1 40	+03	.....
1901, .....	17	1 50	+10	+19
COTTON GOODS.				
1896, .....	16	1 08	.....	.....
1897, .....	16	1 12	+04	.....
1898, .....	16	1 11	—01	.....
1899, .....	16	1 13	+02	.....
1900, .....	16	1 19	+06	.....
1901, .....	16	1 17	—02	+09
WOOLEN ND WORSTED CASSI- MERES.				
1896, .....	11	1 13	.....	.....
1897, .....	11	1 20	+07	.....
1898, .....	11	1 27	+07	.....
1899, .....	11	1 24	—03	.....
1900, .....	11	1 24	.....	.....
1901, .....	11	1 27	+03	+14
WOOLEN AND WORSTED FABRICS.				
1896, .....	16	1 14	.....	.....
1897, .....	16	1 09	—05	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
WOOLEN AND WORSTED FAB- RICS—Continued.				
			Cts.	Cts.
1898, .....	16	\$1 20	+11	.....
1899, .....	16	1 21	+01	.....
1900, .....	16	1 18	—03	.....
1901, .....	16	1 19	+01	+05
WOOLEN AND WORSTED YARNS.				
1896, .....	12	1 09	.....	.....
1897, .....	12	1 11	+02	.....
1898, .....	12	1 09	—02	.....
1899, .....	12	1 24	+15	.....
1900, .....	12	1 16	—08	.....
1901, .....	12	1 19	+03	+10
RUGS, YARNS, ETC.				
1896, .....	5	1 25	.....	.....
1897, .....	5	1 19	—06	.....
1898, .....	5	1 23	+04	.....
1899, .....	5	1 34	+11	.....
1900, .....	5	1 27	—07	.....
1901, .....	5	1 32	+05	+07
CARPET YARNS.				
1896, .....	11	1 27	.....	.....
1897, .....	11	1 25	—02	.....
1898, .....	11	1 25	.....	.....
1899, .....	11	1 28	+03	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tabish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
CARPET YARNS—Continued.			Cts.	Cts.
1900, .....	11	\$1 32	+04	.....
1901, .....	11	1 33	+01	+06
COTTON YARNS.				
1896, .....	7	1 03	.....	.....
1897, .....	7	1 02	—01	.....
1898, .....	7	1 02	.....	.....
1899, .....	7	1 05	+03	.....
1900, .....	7	1 02	—03	.....
1901, .....	7	1 12	+10	+09
WORSTED, WOOLEN AND COT- TON YARNS.				
1896, .....	10	1 16	.....	.....
1897, .....	10	1 04	—12	.....
1898, .....	10	1 15	+11	.....
1899, .....	10	1 24	+09	.....
1900, .....	10	1 00	—24	.....
1901, .....	10	99	—01	—17
WOOLEN BLANKETS, FLAN- NELS, ETC.				
1896, .....	5	1 18	.....	.....
1897, .....	5	1 22	+04	.....
1898, .....	5	94	—28	.....
1899, .....	5	1 19	+25	.....
1900, .....	5	1 20	+01	.....
1901, .....	5	1 13	—07	—05



## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
LACE GOODS.			Cts.	Cts.
1896, .....	3	\$0 98	.....	.....
1897, .....	3	88	—05	.....
1898, .....	3	90	+02	.....
1899, .....	3	94	+04	.....
1900, .....	3	98	+04	.....
1901, .....	3	1 02	+04	+09
CHENILLE GOODS.				
1896, .....	3	81	.....	.....
1897, .....	3	84	+03	.....
1898, .....	3	95	+11	.....
1899, .....	3	1 13	+18	.....
1900, .....	3	1 28	+15	.....
1901, .....	3	1 31	+03	+59
UPHOLSTERY GOODS.				
1896, .....	10	1 18	.....	.....
1897, .....	10	1 24	+06	.....
1898, .....	10	1 32	+08	.....
1899, .....	10	1 40	+08	.....
1900, .....	10	1 47	+07	.....
1901, .....	10	1 44	+03	+26
KNIT GOODS, UNDERWEAR.				
1896, .....	13	97	.....	.....
1897, .....	13	91	—06	.....
1898, .....	13	95	+04	.....

## AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS. FOR THE YEARS. 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
KNIT GOODS, UNDERWEAR— Continued.				
			Cts.	Cts.
1899, .....	13	\$0 99	+04	.....
1900, .....	13	88	—11	.....
1901, .....	13	91	+03	—06
HOSIERY.				
1896, .....	31	93	.....	.....
1897, .....	31	85	—08	.....
1898, .....	31	88	+03	.....
1899, .....	31	93	+05	.....
1900, .....	31	95	+02	.....
1901, .....	31	96	+01	+03
SILK—BROAD GOODS, THROWN SILK, YARNS, ETC.				
1896, .....	6	92	.....	.....
1897, .....	6	76	—16	.....
1898, .....	6	82	+06	.....
1899, .....	6	96	+14	.....
1900, .....	6	84	—12	.....
1901, .....	6	84	.....	—08
SILK—BROAD GOODS AND RIB- BONS.				
1896, .....	2	83	.....	.....
1897, .....	2	77	—06	.....
1898, .....	2	78	+01	.....
1899, .....	2	87	+09	.....

AVERAGE DAILY WAGE—Continued.

COMPARISON OF AVERAGE DAILY WAGE, SKILLED AND UNSKILLED—  
SAME ESTABLISHMENTS, FOR THE YEARS, 1896, 1897, 1898, 1899, 1900  
AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Average daily wage.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1892.
SILK—BROAD GOODS AND RIB- BONS—Continued.				
			Cts.	Cts.
1900, .....	2	\$0 89	+02	.....
1901, .....	2	75	—14	—08
SILK—RIBBONS.				
1896, .....	4	98	.....	.....
1897, .....	4	1 17	+19	.....
1898, .....	4	1 12	—05	.....
1899, .....	4	1 15	+03	.....
1900, .....	4	1 07	—08	.....
1901, .....	4	1 14	+07	+16

## COST OF BASIC MATERIAL TO VALUE OF PRODUCTION.

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

NOTE...In this table the relative per cent. of cost of basic materials to value of production in same establishments for the years 1896, 1897, 1898, 1899, 1900 and 1901 is presented, with the relative increase or decrease, together with the increase or decrease 1901 over 1896. Eighty-eight industries, representing 801 establishments, are considered.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. basic material to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
STEEL CASTINGS.				
1896, .....	7	27.9	.....	.....
1897, .....	7	28.9	+1.0	.....
1898, .....	7	24.6	—4.3	.....
1899, .....	7	28.7	+4.1	.....
1900, .....	7	19.5	—9.2	.....
1901, .....	7	22.6	+3.1	—5.3
STEEL BILLETS, SLABS, BLOOMS, ETC.				
1896, .....	4	80.0	.....	.....
1897, .....	4	70.0	—10.0	.....
1898, .....	4	80.8	+10.8	.....
1899, .....	4	76.8	—4.0	.....
1900, .....	4	90.1	+13.3	.....
1901, .....	4	81.0	—9.1	+1.0
TOOL STEEL.				
1896, .....	3	33.8	.....	.....
1897, .....	3	27.6	—6.2	.....
1898, .....	3	20.1	—7.5	.....
1899, .....	3	20.1	.....	.....

# COST OF BASIC MATERIAL TO VALUE OF PRODUCTION— Continued.

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. basic material to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
TOOL STEEL—Continued.				
1900, .....	3	18.0	—2.1	.....
1901, .....	3	19.0	+1.0	—14.8
IRON AND STEEL FORGINGS.				
1896, .....	7	38.6	.....	.....
1897, .....	7	38.9	+ .3	.....
1898, .....	7	33.9	—5.0	.....
1899, .....	7	32.2	—1.7	.....
1900, .....	7	59.2	+27.0	.....
1901, .....	7	37.2	—22.0	—1.4
IRON SPECIALTIES.				
1896, .....	2	60.4	.....	.....
1897, .....	2	64.8	+4.4	.....
1898, .....	2	58.7	—6.1	.....
1899, .....	2	59.8	+1.1	.....
1900, .....	2	57.6	—2.2	.....
1901, .....	2	50.8	—6.8	—9.6
MALLEABLE IRON.				
1896, .....	4	30.5	.....	.....
1897, .....	4	28.0	—2.5	.....
1898, .....	4	30.5	+2.5	.....
1899, .....	4	29.9	— .6	.....
1900, .....	4	39.3	+9.4	.....
1901, .....	4	40.6	+1.3	+10.1

# COST OF BASIC MATERIAL TO VALUE OF PRODUCTION— Continued.

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. basic material to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## BOLTS, NUTS, ETC.

1896, .....	8	47.3	.....	.....
1897, .....	8	48.4	+1.1	.....
1898, .....	8	50.1	+1.7	.....
1899, .....	8	59.1	+9.0	.....
1900, .....	8	50.2	—8.9	.....
1901, .....	8	57.1	+6.9	+9.8

## WIRE NAILS AND RIVETS.

1896, .....	4	56.4	.....	.....
1897, .....	4	59.2	+2.8	.....
1898, .....	4	53.1	—6.1	.....
1899, .....	4	40.9	—12.2	.....
1900, .....	4	56.8	+15.9	.....
1901, .....	4	55.8	—1.0	—6

## TACKS AND SMALL NAILS.

1896, .....	4	41.7	.....	.....
1897, .....	4	38.1	—3.6	.....
1898, .....	4	37.2	—9	.....
1899, .....	4	35.4	—1.8	.....
1900, .....	4	37.4	+2.0	.....
1901, .....	4	35.3	—2.1	—6.4

## WIRE.

1896, .....	5	51.7	.....	.....
1897, .....	5	49.0	—2.7	.....



**COST OF BASIC MATERIAL TO VALUE OF PRODUCTION—**  
Continued.

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME  
ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND  
1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Relative per cent. basic ma- terial to value of production.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
WIRE—Continued.				
1898, .....	5	47.7	—1.3	.....
1899, .....	5	43.6	—4.1	.....
1900, .....	5	47.8	+4.2	.....
1901, .....	5	47.2	— .6	—4.5
WIRE ROPE.				
1896, .....	2	47.5	.....	.....
1897, .....	2	38.6	—8.9	.....
1898, .....	2	37.9	— .7	.....
1899, .....	2	37.2	— .7	.....
1900, .....	2	70.4	+33.2	.....
1901, .....	2	64.4	—6.0	+16.9
WIRE GOODS.				
1896, .....	5	21.0	.....	.....
1897, .....	5	22.6	+1.6	.....
1898, .....	5	19.2	—3.4	.....
1899, .....	5	22.4	+3.2	.....
1900, .....	5	24.9	+2.5	.....
1901, .....	5	30.0	+5.1	+9.0
WAGON AND CARRIAGE AXLES AND SPRINGS.				
1896, .....	6	31.4	.....	.....
1897, .....	6	30.3	—1.1	.....
1898, .....	6	22.7	—7.6	.....
1899, .....	6	30.9	+8.2	.....

**COST OF BASIC MATERIAL TO VALUE OF PRODUCTION—**  
**Continued.**

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME  
 ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND  
 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Relative per cent. basic ma- terial to value of production.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
<b>WAGON AND CARRIAGE AXLES AND SPRINGS—Continued.</b>				
1900, .....	6	32.3	+1.4	.....
1901, .....	6	37.4	+5.1	+6.0
<b>SCALES, ETC.</b>				
1896, .....	4	34.0	.....	.....
1897, .....	4	33.6	— .4	.....
1898, .....	4	33.5	— .1	.....
1899, .....	4	32.1	—1.4	.....
1900, .....	4	32.6	+ .5	.....
1901, .....	4	31.7	— .9	—2.3
<b>STOVES, RANGES, HEATERS, ETC.</b>				
1896, .....	37	20.5	.....	.....
1897, .....	37	20.2	— .3	.....
1898, .....	37	20.5	+ .3	.....
1899, .....	37	21.4	+ .9	.....
1900, .....	37	26.3	+4.9	.....
1901, .....	37	24.8	—1.5	+4.3
<b>BATH BOILERS, TANKS, ETC.</b>				
1896, .....	2	54.6	.....	.....
1897, .....	2	48.9	—5.7	.....
1898, .....	2	49.4	+ .5	.....
1899, .....	2	50.0	+ .6	.....
1900, .....	2	53.7	+3.7	.....
1901, .....	2	51.8	—1.9	—2.8

# COST OF BASIC MATERIAL TO VALUE OF PRODUCTION— Continued.

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. basic material to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
HARDWARE SPECIALTIES.				
1896, .....	14	26.8	.....	.....
1897, .....	14	24.9	—1.9	.....
1898, .....	14	24.8	—1	.....
1899, .....	14	27.0	+2.2	.....
1900, .....	14	25.4	—1.6	.....
1901, .....	14	26.3	+1.9	—1.5
EDGE TOOLS.				
1896, .....	12	41.9	.....	.....
1897, .....	12	28.5	—13.4	.....
1898, .....	12	27.4	—1.1	.....
1899, .....	12	28.7	+1.3	.....
1900, .....	12	30.1	+1.4	.....
1901, .....	12	33.6	+3.5	—8.3
WRENCHES, PICKS, ETC.				
1896, .....	5	32.5	.....	.....
1897, .....	5	33.0	+1.5	.....
1898, .....	5	29.0	—4.0	.....
1899, .....	5	33.4	+4.4	.....
1900, .....	5	37.1	+3.7	.....
1901, .....	5	31.6	—5.5	—1.9
LOCOMOTIVES AND CARS BUILT AND REPAIRED.				
1896, .....	3	54.2	.....	.....
1897, .....	3	50.2	—4.0	.....

**COST OF BASIC MATERIAL TO VALUE OF PRODUCTION—**  
**Continued.**

**COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME**  
**ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND**  
**1901.**

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Relative per cent. basic ma- terial to value of production.	Increase(+) or decrease (-) as com- pared with the preced- ing year.	Increase (+) or de- crease(-) 1901 as compared with 1896.
<b>LOCOMOTIVES AND CARS BUILT AND REPAIRED—Con- tinued.</b>				
1898, .....	3	52.4	+2.2	.....
1899, .....	3	56.2	+3.8	.....
1900, .....	3	57.7	+1.5	.....
1901, .....	3	55.8	-1.9	+1.6
<b>WROUGHT IRON PIPE AND TUBES.</b>				
1896, .....	5	66.9	.....	.....
1897, .....	5	62.6	-4.3	.....
1898, .....	5	56.9	-5.7	.....
1899, .....	5	59.2	+2.3	.....
1900, .....	5	60.5	+1.3	.....
1901, .....	5	55.3	-5.2	-11.6
<b>CAST IRON PIPE.</b>				
1896, .....	3	66.5	.....	.....
1897, .....	3	64.8	-1.7	.....
1898, .....	3	64.3	-.5	.....
1899, .....	3	67.6	+3.3	.....
1900, .....	3	64.4	-3.2	.....
1901, .....	3	62.6	-1.8	-3.9
<b>BRASS, COPPER AND BRONZE GOODS.</b>				
1896, .....	19	51.5	.....	.....
1897, .....	19	55.9	+4.4	.....

# COST OF BASIC MATERIAL TO VALUE OF PRODUCTION— Continued.

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME  
ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND  
1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Relative per cent. basic ma- terial to value of production.	Increase(+) or decrease (-) as com- pared with the preced- ing year.	Increase (+) or de- crease(-) 1901 as compared with 1896.
BRASS, COPPER AND BRONZE GOODS—Continued.				
1898, .....	19	54.6	+1.3	.....
1899, .....	19	60.2	+5.6	.....
1900, .....	19	45.8	-14.4	.....
1901, .....	19	61.9	+16.1	+10.4
IRON AND STEEL BRIDGES.				
1896, .....	7	58.5	.....	.....
1897, .....	7	55.6	-2.9	.....
1898, .....	7	57.2	+1.6	.....
1899, .....	7	62.7	+5.5	.....
1900, .....	7	64.1	+1.4	.....
1901, .....	7	59.1	-5.0	+0.6
LOCOMOTIVES. STATIONERY ENGINES, ETC.				
1896, .....	9	48.1	.....	.....
1897, .....	9	46.1	-2.0	.....
1898, .....	9	41.9	-4.2	.....
1899, .....	9	49.0	+7.1	.....
1900, .....	9	47.0	-2.0	.....
1901, .....	9	45.4	-1.6	-2.7
ENGINES, BOILERS, ETC.				
1896, .....	10	48.2	.....	.....
1897, .....	10	49.9	+1.7	.....
1898, .....	10	49.0	-.9	.....

# COST OF BASIC MATERIAL TO VALUE OF PRODUCTION— Continued.

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. basic material to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
ENGINES, BOILERS, ETC.—Continued.				
1899, .....	10	51.0	+2.0	.....
1900, .....	10	48.7	—2.3	.....
1901, .....	10	48.8	+1.1	+1.6
CARS, SPRINGS, AXLES AND RAILWAY SUPPLIES.				
1896, .....	12	49.3	.....	.....
1897, .....	12	44.5	—4.8	.....
1898, .....	12	33.5	—11.0	.....
1899, .....	12	56.3	+22.8	.....
1900, .....	12	62.1	+5.8	.....
1901, .....	12	65.0	+2.9	+15.7
IRON VESSELS AND ENGINES.				
1896, .....	3	38.5	.....	.....
1897, .....	3	44.0	+5.5	.....
1898, .....	3	45.2	+1.2	.....
1899, .....	3	55.8	+10.6	.....
1900, .....	3	55.6	—2	.....
1901, .....	3	56.3	+1.7	+17.8
BOILERS, TANKS, STACKS, ETC.				
1896, .....	21	39.0	.....	.....
1897, .....	21	45.4	+6.4	.....
1898, .....	21	47.8	+2.4	.....



# COST OF BASIC MATERIAL TO VALUE OF PRODUCTION— Continued.

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME  
ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND  
1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Relative per cent. basic ma- terial to value of production.	Increase(+) or decrease (-) as com- pared with the preced- ing year.	Increase (+) or de- crease(-) 1901 as compared with 1896.
BOILERS, TANKS, STACKS, ETC. —Continued.				
1899, .....	21	53.5	+5.7	.....
1900, .....	21	52.5	—1.0	.....
1901, .....	21	53.9	+1.4	+14.9
MACHINERY.				
1896, .....	21	32.4	.....	.....
1897, .....	21	31.2	—1.2	.....
1898, .....	21	31.2	.....	.....
1899, .....	21	37.1	+5.9	.....
1900, .....	21	35.8	—1.3	.....
1901, .....	21	36.5	+ .7	+4.1
FOUNDRIES AND MACHINE SHOPS.				
1896, .....	25	33.1	.....	.....
1897, .....	25	35.4	+2.3	.....
1898, .....	25	35.4	.....	.....
1899, .....	25	37.0	+1.6	.....
1900, .....	25	34.7	—2.3	.....
1901, .....	25	35.2	+ .5	+2.1
FILES, ETC.				
1896, .....	2	29.7	.....	.....
1897, .....	2	28.0	—1.7	.....
1898, .....	2	20.7	—7.3	.....
1899, .....	2	23.0	+2.3	.....

# COST OF BASIC MATERIAL TO VALUE OF PRODUCTION— Continued.

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. basic material to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## FILES, ETC.—Continued.

1900, .....	2	23.8	+ .8	.....
1901, .....	2	20.2	—3.6	—9.5

## SAWS.

1896, .....	3	42.0	.....	.....
1897, .....	3	37.5	—4.5	.....
1898, .....	3	36.8	— .7	.....
1899, .....	3	37.8	+1.0	.....
1900, .....	3	36.4	—1.4	.....
1901, .....	3	34.9	—1.5	—7.1

## PLUMBER SUPPLIES.

1896, .....	3	*	.....	.....
1897, .....	3	*	.....	.....
1898, .....	3	*	.....	.....
1899, .....	3	38.4	.....	.....
1900, .....	3	32.6	—5.8	.....
1901, .....	3	33.9	+1.3	.....

## ELECTRICAL SUPPLIES.

1896, .....	4	36.6	.....	.....
1897, .....	4	39.4	+2.8	.....
1898, .....	4	34.3	—5.1	.....
1899, .....	4	31.2	—3.1	.....
1900, .....	4	34.8	+3.6	.....
1901, .....	4	34.9	+ .1	—1.7

\*Incomplete returns of value of basic material.

# COST OF BASIC MATERIAL TO VALUE OF PRODUCTION— Continued.

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. basic material to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
SHOVELS, SPADES, SCOOPS, ETC.				
1896, .....	8	38.6	.....	.....
1897, .....	8	34.4	—4.2	.....
1898, .....	8	29.7	—4.7	.....
1899, .....	8	31.2	+1.5	.....
1900, .....	8	35.8	+4.6	.....
1901, .....	8	33.5	—2.3	—5.1
SAFES AND VAULT DOORS.				
1896, .....	2	43.7	.....	.....
1897, .....	2	40.1	—3.6	.....
1898, .....	2	43.1	+3.0	.....
1899, .....	2	41.8	—1.3	.....
1900, .....	2	47.1	+5.3	.....
1901, .....	2	44.6	—2.5	+0.9
METAL AND METALLIC GOODS.				
1896, .....	3	29.1	.....	.....
1897, .....	3	27.2	—1.9	.....
1898, .....	3	28.0	+ .8	.....
1899, .....	3	27.4	— .6	.....
1900, .....	3	28.0	+ .6	.....
1901, .....	3	28.9	+ .9	— .2
BUILDING AND STRUCTURAL IRON WORKS.				
1896, .....	2	43.8	.....	.....
1897, .....	2	55.0	+11.2	.....

## COST OF BASIC MATERIAL TO VALUE OF PRODUCTION— Continued.

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME  
ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND  
1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Relative per cent. basic ma- terial to value of production.	Increase(+) or decrease (-) as com- pared with the preced- ing year.	Increase (+) or de- crease(-) 1901 as compared with 1896.
<b>BUILDING AND STRUCTURAL IRON WORKS—Continued.</b>				
1898, .....	2	60.3	+5.3	.....
1899, .....	2	56.9	-3.4	.....
1900, .....	2	66.8	+9.9	.....
1901, .....	2	51.9	-14.9	+8.1
<b>IRON CHAINS.</b>				
1896, .....	5	38.4	.....	.....
1897, .....	5	37.6	-.8	.....
1898, .....	5	40.5	+2.9	.....
1899, .....	5	43.2	+2.7	.....
1900, .....	5	47.0	+3.8	.....
1901, .....	5	42.6	-4.4	+4.2
<b>IRON FENCES AND RAILINGS.</b>				
1896, .....	7	40.1	.....	.....
1897, .....	7	40.3	+.2	.....
1898, .....	7	43.8	+3.5	.....
1899, .....	7	51.1	+7.3	.....
1900, .....	7	51.3	+.2	.....
1901, .....	7	54.4	+3.1	+14.3
<b>AGRICULTURAL IMPLEMENTS.</b>				
1896, .....	12	45.6	.....	.....
1897, .....	12	42.2	-3.4	.....
1898, .....	12	41.2	-1.0	.....
1899, .....	12	43.4	+2.2	.....

# COST OF BASIC MATERIAL TO VALUE OF PRODUCTION— Continued.

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME  
ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND  
1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Relative per cent. basic ma- terial to value of production.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
AGRICULTURAL IMPLEMENTS —Continued.				
1900, .....	12	46.7	+3.3	.....
1901, .....	12	43.7	—3.0	—1.9
STEAM PUMPS.				
1896, .....	2	43.9	.....	.....
1897, .....	2	51.1	+7.2	.....
1898, .....	2	39.5	—11.6	.....
1899, .....	2	42.9	+3.4	.....
1900, .....	2	31.1	—11.8	.....
1901, .....	2	43.4	+12.3	—5
BICYCLES.				
1896, .....	3	60.2	.....	.....
1897, .....	3	71.5	+11.3	.....
1898, .....	3	66.6	—4.9	.....
1899, .....	3	58.9	—7.7	.....
1900, .....	3	64.8	+5.9	.....
1901, .....	3	70.6	+5.8	+10.4
PIANOS AND ORGANS.				
1896, .....	2	34.5	.....	.....
1897, .....	2	38.8	+4.3	.....
1898, .....	2	42.2	+3.4	.....
1899, .....	2	33.1	—9.1	.....
1900, .....	2	38.6	+5.5	.....
1901, .....	2	42.3	+3.7	+7.8

# COST OF BASIC MATERIAL TO VALUE OF PRODUCTION— Continued.

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. basic material to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
TINWARE.				
1896, .....	5	45.8	.....	.....
1897, .....	5	46.3	+ .5	.....
1898, .....	5	46.3	.....	.....
1899, .....	5	49.9	+3.6	.....
1900, .....	5	52.4	+2.5	.....
1901, .....	5	52.8	+ .4	+7.0
PAPER MANUFACTORIES.				
1896, .....	8	47.0	.....	.....
1897, .....	8	43.9	—3.1	.....
1898, .....	8	44.8	+ .9	.....
1899, .....	8	40.9	—3.9	.....
1900, .....	8	37.4	—3.5	.....
1901, .....	8	38.9	+1.5	—8.1
WALL PAPER.				
1896, .....	4	49.8	.....	.....
1897, .....	4	50.5	+ .7	.....
1898, .....	4	51.1	+ .6	.....
1899, .....	4	50.0	—1.1	.....
1900, .....	4	53.1	+3.1	.....
1901, .....	4	62.2	+9.1	+12.4
CIGARS.				
1896, .....	46	37.9	.....	.....
1897, .....	46	40.4	+2.5	.....



# COST OF BASIC MATERIAL TO VALUE OF PRODUCTION— Continued.

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME  
ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND  
1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Relative per cent. basic ma- terial to value of production.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
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## CIGARS—Continued.

1898, .....	46	41.2	+ .8	.....
1899, .....	46	39.2	—2.0	.....
1900, .....	46	38.9	— .3	.....
1901, .....	46	38.3	— .6	+ .4

## BOOK BINDING.

1896, .....	3	37.3	.....	.....
1897, .....	3	38.2	+ .9	.....
1898, .....	3	36.3	—1.9	.....
1899, .....	3	37.1	+ .8	.....
1900, .....	3	38.5	+1.4	.....
1901, .....	3	40.2	+1.7	+2.9

## CORDAGE, ROPE AND TWINE.

1896, .....	5	70.4	.....	.....
1897, .....	5	73.9	+3.5	.....
1898, .....	5	71.2	—2.7	.....
1899, .....	5	72.5	+1.3	.....
1900, .....	5	77.1	+4.6	.....
1901, .....	5	76.2	— .9	+5.8

## PAPER, PAPER BOXES, EN- VELOPES, ETC.

1896, .....	27	46.6	.....	.....
1897, .....	27	47.2	+ .6	.....
1898, .....	27	45.8	—1.4	.....
1899, .....	27	45.7	— .1	.....

**COST OF BASIC MATERIAL TO VALUE OF PRODUCTION—**  
Continued.

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME  
ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND  
1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Relative per cent. basic ma- terial to value of production.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
<b>PAPER, PAPER BOXES, ENVELOPES, ETC.—Continued.</b>				
1900, .....	27	49.0	+3.3	.....
1901, .....	27	46.5	—2.5	—1
<b>POTTERY.</b>				
1896, .....	2	32.9	.....	.....
1897, .....	2	29.3	—3.6	.....
1898, .....	2	25.0	—4.3	.....
1899, .....	2	22.4	—2.6	.....
1900, .....	2	27.8	+5.4	.....
1901, .....	2	29.4	+1.6	—3.5
<b>PAVING BRICK.</b>				
1896, .....	7	9.9	.....	.....
1897, .....	7	7.2	—2.7	.....
1898, .....	7	6.3	—9	.....
1899, .....	7	8.0	+1.7	.....
1900, .....	7	12.0	+4.0	.....
1901, .....	7	9.0	—3.0	—9
<b>BUILDING BRICK.</b>				
1896, .....	35	11.1	.....	.....
1897, .....	35	11.0	—1	.....
1898, .....	35	11.7	+7	.....
1899, .....	35	10.8	—9	.....
1900, .....	35	10.3	—5	.....
1901, .....	35	10.5	+2	—6

# COST OF BASIC MATERIAL TO VALUE OF PRODUCTION— Continued.

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME  
ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND  
1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Relative per cent. basic ma- terial to value of production.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
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## FIRE BRICK.

1896, .....	18	25.8	.....	.....
1897, .....	18	24.4	—1.4	.....
1898, .....	18	21.8	—2.6	.....
1899, .....	18	22.2	+ .4	.....
1900, .....	18	22.2	.....	.....
1901, .....	18	22.5	+ .3	—3.3

## SLATE ROOFING, ETC., TON- NAGE.

1896, .....	6	8.3	.....	.....
1897, .....	6	7.1	—1.2	.....
1898, .....	6	6.0	—1.1	.....
1899, .....	6	6.8	+ .8	.....
1900, .....	6	5.4	—1.4	.....
1901, .....	6	5.8	+ .4	—2.5

## SLATE ROOFING, ETC., SQUARES.

1896, .....	14	9.4	.....	.....
1897, .....	14	9.1	— .3	.....
1898, .....	14	9.2	+ .1	.....
1899, .....	14	8.6	— .6	.....
1900, .....	14	7.8	— .8	.....
1901, .....	14	8.9	+1.1	— .5

# COST OF BASIC MATERIAL TO VALUE OF PRODUCTION— Continued.

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. basic material to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
WINDOW GLASS, BOTTLES AND TABLE GOODS.				
1896, .....	22	25.2	.....	.....
1897, .....	22	24.3	— .9	.....
1898, .....	22	20.6	— 3.7	.....
1899, .....	22	21.4	+ .8	.....
1900, .....	22	20.3	— 1.1	.....
1901, .....	22	20.5	+ .2	— 4.7
GLAZED ON CHROME KID.				
1896, .....	7	70.0	.....	.....
1897, .....	7	66.8	— 3.2	.....
1898, .....	7	63.8	— 3.0	.....
1899, .....	7	67.4	+ 3.6	.....
1900, .....	7	62.0	— 5.4	.....
1901, .....	7	49.3	— 12.7	— 20.7
MEN'S, WOMEN'S, MISSES AND CHILDREN'S SHOES.				
1896, .....	15	56.4	.....	.....
1897, .....	15	58.4	+ 2.0	.....
1898, .....	15	56.7	— .7	.....
1899, .....	15	56.9	+ .2	.....
1900, .....	15	55.6	— 1.3	.....
1901, .....	15	58.0	+ 2.4	+ 1.6
SUSPENDERS.				
1896, .....	2	63.0	.....	.....
1897, .....	2	66.9	+ 3.9	.....

# COST OF BASIC MATERIAL TO VALUE OF PRODUCTION— Continued.

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME  
ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND  
1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Relative per cent. basic ma- terial to value of production.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
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## SUSPENDERS—Continued.

1898, .....	2	62.6	—4.3	.....
1899, .....	2	65.2	+2.6	.....
1900, .....	2	70.5	+5.3	.....
1901, .....	2	67.9	—2.6	+4.9

## HATS AND CAPS.

1896, .....	3	54.1	.....	.....
1897, .....	3	52.9	—1.2	.....
1898, .....	3	51.2	—1.7	.....
1899, .....	3	62.0	+10.8	.....
1900, .....	3	56.4	—5.6	.....
1901, .....	3	44.7	—11.7	—9.4

## FUR AND FELT HATS.

1896, .....	4	30.6	.....	.....
1897, .....	4	30.6	.....	.....
1898, .....	4	28.6	—2.0	.....
1899, .....	4	29.4	+1.8	.....
1900, .....	4	29.3	—1	.....
1901, .....	4	29.6	+1.3	—1.0

## WOLL HATS.

1896, .....	7	51.8	.....	.....
1897, .....	7	53.0	+1.2	.....
1898, .....	7	49.3	—3.7	.....
1899, .....	7	44.7	—4.6	.....

**COST OF BASIC MATERIAL TO VALUE OF PRODUCTION—**  
**Continued.**

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME  
 ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND  
 1901.

Character of Industry and Years.	Number of es- tablish- ments, consid- ered.	Relative per cent. basic ma- terial to value of production.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
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**WOOL HATS—Continued.**

1900, .....	7	50.6	+5.9	.....
1901, .....	7	49.1	—1.5	—2.7

**UMBRELLAS AND PARASOLS.**

1896, .....	4	59.1	.....	.....
1897, .....	4	59.7	+ .6	.....
1898, .....	4	65.2	+5.5	.....
1899, .....	4	56.4	—8.8	.....
1900, .....	4	67.8	+11.4	.....
1901, .....	4	73.0	+5.2	+13.9

**DRESS TRIMMINGS, BRAIDS,  
 ETC.**

1896, .....	8	44.0	.....	.....
1897, .....	8	46.6	+2.6	.....
1898, .....	8	51.3	+4.7	.....
1899, .....	8	43.8	—7.5	.....
1900, .....	8	46.9	+3.1	.....
1901, .....	8	47.1	+ .2	+3.1

**SHIRTS AND SHIRT WAISTS.**

1896, .....	9	46.8	.....	.....
1897, .....	9	49.9	+3.1	.....
1898, .....	9	52.3	+2.4	.....
1899, .....	9	50.3	—2.0	.....
1900, .....	9	50.3	.....	.....
1901, .....	9	48.6	—1.7	+1.8



# COST OF BASIC MATERIAL TO VALUE OF PRODUCTION— Continued.

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME  
ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND  
1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Relative per cent. basic ma- terial to value of production.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
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## NECKWEAR.

1896, .....	3	57.0	.....	.....
1897, .....	3	56.8	— .2	.....
1898, .....	3	57.1	+ .3	.....
1899, .....	3	59.8	+2.7	.....
1900, .....	3	59.7	— .1	.....
1901, .....	3	61.8	+2.1	+4.8

## COTTON AND WOOLEN CLOTHS.

1896, .....	24	53.3	.....	.....
1897, .....	24	59.0	+5.7	.....
1898, .....	24	57.9	—1.1	.....
1899, .....	24	57.7	— .2	.....
1900, .....	24	55.2	—2.5	.....
1901, .....	24	56.2	+1.0	+2.9

## CARPETS.

1896, .....	17	58.7	.....	.....
1897, .....	17	60.8	+2.1	.....
1898, .....	17	59.1	—1.7	.....
1899, .....	17	58.8	— .3	.....
1900, .....	17	60.7	+1.9	.....
1901, .....	17	59.3	—1.4	+ .6

## COTTON GOODS.

1896, .....	16	53.8	.....	.....
1897, .....	16	50.0	—3.8	.....

# COST OF BASIC MATERIAL TO VALUE OF PRODUCTION— Continued.

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME  
ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND  
1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Relative per cent. basic ma- terial to value of production.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
COTTON GOODS—Continued.				
1898, .....	16	47.6	—2.4	.....
1899, .....	16	48.3	+ .7	.....
1900, .....	16	48.7	+ .4	.....
1901, .....	16	50.6	+1.9	—3.2
WOOLEN AND WORSTED CAS- SIMERES.				
1896, .....	11	52.5	.....	.....
1897, .....	11	55.3	+2.8	.....
1898, .....	11	56.5	+1.2	.....
1899, .....	11	58.0	+1.5	.....
1900, .....	11	51.2	—6.8	.....
1901, .....	11	52.3	+1.1	+ .2
WOOLEN AND WORSTED FABRICS.				
1896, .....	16	53.3	.....	.....
1897, .....	16	56.0	+2.7	.....
1898, .....	16	57.0	+1.0	.....
1899, .....	16	58.2	+1.2	.....
1900, .....	16	58.4	+ .2	.....
1901, .....	16	59.5	+1.1	+6.2
WOOLEN AND WORSTED YARNS.				
1896, .....	12	60.2	.....	.....
1897, .....	12	67.9	+7.7	.....
1898, .....	12	52.2	—15.7	.....

**COST OF BASIC MATERIAL TO VALUE OF PRODUCTION—**  
Continued.

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME  
ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND  
1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Relative per cent. basic ma- terial to value of production.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
<b>WOOLEN AND WORSTED YARNS—Continued.</b>				
1899, .....	12	50.2	—2.0	.....
1900, .....	12	55.9	+5.7	.....
1901, .....	12	66.8	+10.9	+6.6
<b>RUGS, YARNS, ETC.</b>				
1896, .....	5	47.8	.....	.....
1897, .....	5	47.4	—4	.....
1898, .....	5	44.3	—3.1	.....
1899, .....	5	43.0	—1.3	.....
1900, .....	5	45.2	+2.2	.....
1901, .....	5	48.3	+3.1	+5
<b>CARPET YARNS.</b>				
1896, .....	11	69.1	.....	.....
1897, .....	11	73.2	+4.1	.....
1898, .....	11	68.0	—5.2	.....
1899, .....	11	71.2	+3.2	.....
1900, .....	11	68.4	—2.8	.....
1901, .....	11	63.9	—4.5	—5.2
<b>COTTON YARNS.</b>				
1896, .....	7	66.9	.....	.....
1897, .....	7	65.8	—1.1	.....
1898, .....	7	60.9	—4.9	.....
1899, .....	7	59.9	—1.0	.....
1900, .....	7	62.9	+3.0	.....
1901, .....	7	63.1	+2	—3.8

**COST OF BASIC MATERIAL TO VALUE OF PRODUCTION—**  
Continued.

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME  
ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND  
1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Total pro- duction in tons or given quantity.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
<b>WORSTED, WOOLEN AND COT- TON YARNS.</b>				
1896, .....	10	59.5	.....	.....
1897, .....	10	60.2	+ .7	.....
1898, .....	10	59.7	— .5	.....
1899, .....	10	59.3	— .4	.....
1900, .....	10	65.2	+5.9	.....
1901, .....	10	66.7	+1.5	+7.2
<b>WOOLEN BLANKETS, FLAN- NELS, ETC.</b>				
1896, .....	5	48.4	.....	.....
1897, .....	5	52.3	+3.9	.....
1898, .....	5	53.8	+1.5	.....
1899, .....	5	49.9	—3.9	.....
1900, .....	5	44.0	—5.9	.....
1901, .....	5	53.2	+9.2	+4.8
<b>LACE GOODS.</b>				
1896, .....	3	20.9	.....	.....
1897, .....	3	23.2	+2.3	.....
1898, .....	3	23.8	+ .6	.....
1899, .....	3	26.8	+3.0	.....
1900, .....	3	28.7	+1.9	.....
1901, .....	3	30.6	+1.9	+9.7
<b>CHENILLE GOODS.</b>				
1896, .....	3	59.2	.....	.....
1897, .....	3	57.5	—1.7	.....

**COST OF BASIC MATERIAL TO VALUE OF PRODUCTION—**  
**Continued.**

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME  
 ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND  
 1901.

Character of Industry and Years.	Number of es- tablish- ments- consid- ered.	Relative per cent. basic ma- terial to value of production.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease (—) 1901 as compared with 1896.
<b>CHENILLE GOODS—Continued.</b>				
1898, .....	3	60.3	+2.8	.....
1899, .....	3	54.9	—5.4	.....
1900, .....	3	55.2	+ .3	.....
1901, .....	3	53.9	—1.3	—5.3
<b>UPHOLSTERY GOODS.</b>				
1896, .....	10	53.4	.....	.....
1897, .....	10	52.3	—1.1	.....
1898, .....	10	52.4	+ .1	.....
1899, .....	10	49.2	—3.2	.....
1900, .....	10	49.0	— .2	.....
1901, .....	10	46.0	—3.0	—7.4
<b>KNIT GOODS, UNDERWEAR.</b>				
1896, .....	13	59.1	.....	.....
1897, .....	13	57.7	—1.4	.....
1898, .....	13	58.9	+1.2	.....
1899, .....	13	57.5	—1.4	.....
1900, .....	13	67.5	+10.0	.....
1901, .....	13	64.2	—3.3	+5.1
<b>HOSIERY.</b>				
1896, .....	31	43.4	.....	.....
1897, .....	31	46.9	+3.5	.....
1898, .....	31	47.4	+ .5	.....
1899, .....	31	44.0	—3.4	.....

**COST OF BASIC MATERIAL TO VALUE OF PRODUCTION—**  
Continued.

COMPARISON OF BASIC MATERIAL TO VALUE OF PRODUCTION—SAME  
ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND  
1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Relative per cent. basic ma- terial to value of production.	Increase(+) or decrease (—) as com- pared with the preced- ing year.	Increase (+) or de- crease(—) 1901 as compared with 1896.
HOSIERY—Continued.				
1900, .....	31	45.3	+1.3	.....
1901, .....	31	45.0	— .3	+1.6
SILK—BROAD GOODS, THROWN SILK, YARNS, ETC.				
1896, .....	6	68.1	.....	.....
1897, .....	6	68.8	+ .7	.....
1898, .....	6	67.8	—1.0	.....
1899, .....	6	67.7	— .1	.....
1900, .....	6	72.8	+5.1	.....
1901, .....	6	64.4	—8.4	—3.7
SILK—BROAD GOODS AND RIB- BONS.				
1896, .....	2	48.3	.....	.....
1897, .....	2	42.1	—6.2	.....
1898, .....	2	41.4	— .7	.....
1899, .....	2	42.3	+ .9	.....
1900, .....	2	40.5	—1.8	.....
1901, .....	2	37.5	—3.0	—10.8
SILK RIBBONS.				
1896, .....	4	43.9	.....	.....
1897, .....	4	51.4	+7.5	.....
1898, .....	4	48.2	—3.2	.....
1899, .....	4	49.9	+1.7	.....
1900, .....	4	43.7	—6.2	.....
1901, .....	4	47.6	+3.9	+3.7



## RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

NOTE.—In this table the relative per cent. of wages to value of production by the same establishments for the years 1896, 1897, 1898, 1899, 1900 and 1901 is presented, with the relative increase or decrease, together with the increase or decrease 1901 over 1896. Eighty-eight industries, representing 801 establishments, are considered.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. wages to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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### STEEL CASTINGS.

1896, .....	7	30.9	.....	.....
1897, .....	7	34.4	+3.5	.....
1898, .....	7	29.5	—4.9	.....
1899, .....	7	29.3	—2	.....
1900, .....	7	25.9	—3.4	.....
1901, .....	7	28.9	+3.0	—2.0

### STEEL BILLETS, SLABS, BLOOMS, ETC.

1896, .....	4	8.7	.....	.....
1897, .....	4	6.0	—2.7	.....
1898, .....	4	8.5	+2.5	.....
1899, .....	4	6.6	—1.9	.....
1900, .....	4	7.4	+8	.....
1901, .....	4	7.8	+4	—9

### TOOL STEEL.

1896, .....	3	20.4	.....	.....
1897, .....	3	27.5	+7.1	.....
1898, .....	3	34.4	+6.9	.....

# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. wages to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
TOOL STEEL—Continued.				
1899, .....	3	29.4	—5.0	.....
1900, .....	3	22.6	—6.8	.....
1901, .....	3	19.9	—2.7	—5
IRON AND STEEL FORGINGS.				
1896, .....	7	33.2	.....	.....
1897, .....	7	38.3	+5.1	.....
1898, .....	7	38.0	—3	.....
1899, .....	7	31.8	—6.2	.....
1900, .....	7	35.3	+3.5	.....
1901, .....	7	33.8	—1.5	+6
IRON SPECIALTIES.				
1896, .....	2	22.8	.....	.....
1897, .....	2	19.1	—3.7	.....
1898, .....	2	23.9	+4.8	.....
1899, .....	2	22.8	—1.1	.....
1900, .....	2	22.7	—1	.....
1901, .....	2	24.0	+1.3	+1.2
MALLEABLE IRON.				
1896, .....	4	36.7	.....	.....
1897, .....	4	39.8	+3.1	.....
1898, .....	4	33.9	—5.9	.....
1899, .....	4	33.1	—8	.....
1900, .....	4	34.9	+1.8	.....
1901, .....	4	43.6	+8.7	+6.9

# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. wages to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## BOLTS, NUTS, ETC.

1896, .....	8	28.5	.....	.....
1897, .....	8	25.2	—3.3	.....
1898, .....	8	24.5	— .7	.....
1899, .....	8	19.3	—5.2	.....
1900, .....	8	17.9	—1.4	.....
1901, .....	8	22.7	+4.8	—5.8

## WIRE NAILS AND RIVETS.

1896, .....	4	17.2	.....	.....
1897, .....	4	16.5	— .7	.....
1898, .....	4	17.1	+ .6	.....
1899, .....	4	13.6	—3.5	.....
1900, .....	4	12.3	—1.3	.....
1901, .....	4	14.5	+2.2	—2.7

## TACKS AND SMALL NAILS.

1896, .....	4	29.5	.....	.....
1897, .....	4	29.6	+ .1	.....
1898, .....	4	26.0	—3.6	.....
1899, .....	4	28.3	+2.3	.....
1900, .....	4	26.3	—2.0	.....
1901, .....	4	24.8	—1.5	—4.7

## WIRE.

1896, .....	5	19.7	.....	.....
1897, .....	5	18.0	—1.7	.....

## RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. wages to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## WIRE—Continued.

1898, .....	5	22.4	+4.2	.....
1899, .....	5	24.9	+2.5	.....
1900, .....	5	23.0	—1.9	.....
1901, .....	5	23.3	+3	+3.6

## WIRE ROPE.

1896, .....	2	11.4	.....	.....
1897, .....	2	12.5	+1.1	.....
1898, .....	2	13.6	+1.1	.....
1899, .....	2	11.7	—1.9	.....
1900, .....	2	11.2	—5	.....
1901, .....	2	10.0	—1.2	—1.4

## WIRE GOODS.

1896, .....	5	26.1	.....	.....
1897, .....	5	25.8	—3	.....
1898, .....	5	19.6	—6.2	.....
1899, .....	5	20.9	+1.3	.....
1900, .....	5	18.8	—2.1	.....
1901, .....	5	19.3	+5	—6.8

## WAGON AND CARRIAGE AXLES AND SPRINGS.

1896, .....	6	31.4	.....	.....
1897, .....	6	32.3	+9	.....
1898, .....	6	32.6	+3	.....
1899, .....	6	28.2	—4.4	.....

# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. wages to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## WAGON AND CARRIAGE AXLES AND SPRINGS—Continued.

1900, .....	6	32.2	+4.0	.....
1901, .....	6	35.4	+3.2	+4.0

## SCALES, ETC.

1896, .....	4	28.5	.....	.....
1897, .....	4	27.7	— .8	.....
1898, .....	4	28.8	+1.1	.....
1899, .....	4	27.8	—1.0	.....
1900, .....	4	28.2	+ .4	.....
1901, .....	4	27.9	— .3	— .6

## STOVES, RANGES, HEATERS, ETC.

1896, .....	37	39.6	.....	.....
1897, .....	37	39.4	— .2	.....
1898, .....	37	27.3	—12.1	.....
1899, .....	37	39.1	+11.8	.....
1900, .....	37	39.7	+ .6	.....
1901, .....	37	41.3	+1.6	+1.7

## BATH BOILERS, TANKS, ETC.

1896, .....	2	19.8	.....	.....
1897, .....	2	19.6	— .2	.....
1898, .....	2	21.9	+2.3	.....
1899, .....	2	21.7	— .2	.....
1900, .....	2	20.3	—1.4	.....
1901, .....	2	20.9	+ .6	+1.1

# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. wages to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## HARDWARE SPECIALTIES.

1896, .....	14	42.2	.....	.....
1897, .....	14	39.2	—3.0	.... .
1898, .....	14	39.9	+ .7	.....
1899, .....	14	37.2	—2.7	.....
1900, .....	14	36.7	— .5	.....
1901, .....	14	37.3	+ .6	—4.9

## EDGE TOOLS.

1896, .....	12	32.9	.....	.....
1897, .....	12	39.0	+6.1	.....
1898, .....	12	37.6	—1.4	.....
1899, .....	12	34.1	—3.5	.....
1900, .....	12	31.4	—2.7	.....
1901, .....	12	33.2	+1.8	+ .3

## WRENCHES, PICKS, ETC.

1896, .....	5	29.3	.....	.....
1897, .....	5	26.6	—2.7	.....
1898, .....	5	28.1	+1.5	.....
1899, .....	5	26.2	—1.9	.....
1900, .....	5	26.7	+ .5	.....
1901, .....	5	25.7	—1.0	—3.6

## LOCOMOTIVES AND CARS BUILT AND REPAIRED.

1896, .....	3	43.4	.....	.....
1897, .....	3	46.2	+2.8	.....



# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. wages to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
LOCOMOTIVES AND CARS BUILT AND REPAIRED—Continued.				
1898, .....	3	42.6	—3.6	.....
1899, .....	3	40.4	—2.2	.....
1900, .....	3	39.0	—1.4	.....
1901, .....	3	39.5	+ .5	—3.9
WROUGHT IRON PIPE AND TUBES.				
1896, .....	5	18.2	.....	.....
1897, .....	5	18.0	— .2	.....
1898, .....	5	16.9	—1.1	.....
1899, .....	5	17.5	+ .6	.....
1900, .....	5	12.1	—5.4	.....
1901, .....	5	12.1	.....	—6.1
CAST IRON PIPE.				
1896, .....	3	24.3	.....	.....
1897, .....	3	21.2	—3.1	.....
1898, .....	3	20.1	—1.1	.....
1899, .....	3	19.3	— .8	.....
1900, .....	3	20.5	+1.2	.....
1901, .....	3	20.0	— .5	—4.3
BRASS, COPPER AND BRONZE GOODS.				
1896, .....	19	22.4	.....	.....
1897, .....	19	24.1	+1.7	.....

# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. wages to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
BRASS, COPPER AND BRONZE GOODS—Continued.				
1898, .....	19	23.8	— .3	.....
1899, .....	19	18.6	—5.2	.....
1900, .....	19	21.3	+2.7	.....
1901, .....	19	20.8	— .5	—1.6
IRON AND STEEL BRIDGES.				
1896, .....	7	17.2	.....	.....
1897, .....	7	18.1	+ .9	.....
1898, .....	7	17.4	— .7	.....
1899, .....	7	14.2	—3.2	.....
1900, .....	7	14.3	+ .1	.....
1901, .....	7	18.3	+4.0	+1.1
LOCOMOTIVES, STATIONARY ENGINES, ETC.				
1896, .....	9	35.6	.....	.....
1897, .....	9	35.6	.....	.....
1898, .....	9	35.5	— .1	.....
1899, .....	9	32.8	—2.7	.....
1900, .....	9	29.6	—3.2	.....
1901, .....	9	30.7	+1.1	—4.9
ENGINES, BOILERS, ETC.				
1896, .....	10	31.6	.....	.....
1897, .....	10	31.6	.....	.....
1898, .....	10	32.3	+ .7	.....

# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. wages to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
ENGINES, BOILERS, ETC.—Continued.				
1899, . . . . .	10	25.9	—6.4	.....
1900, . . . . .	10	25.7	— .2	.....
1901, . . . . .	10	27.9	+2.2	—3.7
CARS, SPRINGS, AXLES AND RAILWAY SUPPLIES.				
1896, . . . . .	12	21.1	.....	.....
1897, . . . . .	12	21.3	+ .2	.....
1898, . . . . .	12	18.1	—3.2	.....
1899, . . . . .	12	18.1	.....	.....
1900, . . . . .	12	16.1	—2.0	.....
1901, . . . . .	12	18.3	+2.2	—2.8
IRON VESSELS AND ENGINES.				
1896, . . . . .	3	46.5	.....	.....
1897, . . . . .	3	41.0	—5.5	.....
1898, . . . . .	3	43.4	+2.4	.....
1899, . . . . .	3	37.4	—6.0	.....
1900, . . . . .	3	29.3	—8.1	.....
1901, . . . . .	3	33.8	+4.5	—12.7
BOILERS, TANKS, STACKS, ETC.				
1896, . . . . .	21	27.8	.....	.....
1897, . . . . .	21	28.1	+ .3	.....
1898, . . . . .	21	26.1	—2.0	.....
1899, . . . . .	21	22.6	—3.5	.....

# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. wages to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
BOILERS, TANKS, STACKS, ETC. —Continued.				
1900, .....	21	21.9	— .7	.....
1901, .....	21	22.3	+ .4	—5.5
MACHINERY.				
1896, .....	21	36.2	.....	.....
1897, .....	21	36.1	— .1	.....
1898, .....	21	37.0	+ .9	.....
1899, .....	21	35.8	—1.2	.....
1900, .....	21	32.7	—3.1	.....
1901, .....	21	33.3	+ .6	—2.9
FOUNDRIES AND MACHINE SHOPS.				
1896, .....	25	36.2	.....	.....
1897, .....	25	33.6	—2.6	.....
1898, .....	25	33.2	— .4	.....
1899, .....	25	30.2	—3.0	.....
1900, .....	25	29.8	— .4	.....
1901, .....	25	33.4	+3.6	—2.8
FILES, ETC.				
1896, .....	2	33.9	.....	.....
1897, .....	2	33.6	— .3	.....
1898, .....	2	29.4	—4.2	.....
1899, .....	2	29.8	+ .4	.....
1900, .....	2	29.4	— .4	.....
1901, .....	2	26.2	—3.2	—7.7

# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. value of wages to production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
SAWS.				
1896, .....	3	29.0	.....	.....
1897, .....	3	30.2	+1.2	.....
1898, .....	3	30.0	— .2	.....
1899, .....	3	28.8	—1.2	.....
1900, .....	3	24.4	—4.4	.....
1901, .....	3	25.9	+1.5	—3.1
PLUMBER SUPPLIES.				
1896, .....	3	38.9	.....	.....
1897, .....	3	39.2	+ .3	.....
1898, .....	3	39.5	+ .3	.....
1899, .....	3	35.0	—4.5	.....
1900, .....	3	38.8	+3.8	.....
1901, .....	3	36.9	—1.9	—2.0
ELECTRICAL SUPPLIES.				
1896, .....	4	34.9	.....	.....
1897, .....	4	34.2	— .7	.....
1898, .....	4	28.3	—5.9	.....
1899, .....	4	24.9	—3.4	.....
1900, .....	4	22.8	—2.1	.....
1901, .....	4	25.3	+2.5	—9.6
SHOVELS, SPADES, SCOOPS, ETC.				
1896, .....	8	26.8	.....	.....
1897, .....	8	25.2	—1.6	.....

# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. wages to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
SHOVELS, SPADES, SCOOPS, ETC.—Continued.				
1898, .....	8	23.7	—1.5	.....
1899, .....	8	19.5	—4.2	.....
1900, .....	8	20.3	+ .8	.....
1901, .....	8	17.9	—2.4	—8.9
SAFES AND VAULT DOORS.				
1896, .....	2	36.0	.....	.....
1897, .....	2	38.0	+2.0	.....
1898, .....	2	39.9	+1.9	.....
1899, .....	2	38.2	—1.7	.....
1900, .....	2	30.9	—7.3	.....
1901, .....	2	30.5	— .4	—5.5
METAL AND METALLIC GOODS.				
1896, .....	3	36.3	.....	.....
1897, .....	3	35.7	— .6	.....
1898, .....	3	35.7	.....	.....
1899, .....	3	35.5	— .2	.....
1900, .....	3	34.6	— .9	.....
1901, .....	3	33.9	— .7	—2.4
BUILDING AND STRUCTURAL IRON WORK.				
1896, .....	2	32.0	.....	.....
1897, .....	2	27.6	—4.4	.....
1898, .....	2	21.4	—6.2	.....



# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. value of wages to production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## BUILDING AND STRUCTURAL IRON WORK—Continued.

1899, .....	2	30.5	+9.1	.....
1900, .....	2	19.2	—11.3	.....
1901, .....	2	18.7	—5	—13.3

## IRON CHAINS.

1896, .....	5	27.7	.....	.....
1897, .....	5	28.8	+1.1	.....
1898, .....	5	29.4	+6	.....
1899, .....	5	24.0	—5.4	.....
1900, .....	5	24.5	+5	.....
1901, .....	5	25.4	+9	—2.3

## IRON FENCES AND RAILINGS.

1896, .....	7	31.4	.....	.....
1897, .....	7	33.6	+2.2	.....
1898, .....	7	30.6	—3.0	.....
1899, .....	7	26.8	—3.8	.....
1900, .....	7	28.8	+2.0	.....
1901, .....	7	27.3	—1.5	—4.1

## AGRICULTURAL IMPLEMENTS.

1896, .....	12	25.6	.....	.....
1897, .....	12	24.3	—1.3	.....
1898, .....	12	24.5	+2	.....
1899, .....	12	24.3	—2	.....

# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. value of wages to production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
AGRICULTURAL IMPLEMENTS				
Continued.				
1900, .....	12	23.9	— .4	.....
1901, .....	12	23.9	.....	—1.7
STEAM PUMPS.				
1896, .....	2	36.3	.....	.....
1897, .....	2	41.3	+5.0	.....
1898, .....	2	35.7	—5.6	.....
1899, .....	2	40.5	+4.8	.....
1900, .....	2	29.9	—10.6	.....
1901, .....	2	38.9	+9.0	+2.6
BICYCLES.				
1896, .....	3	19.3	.....	.....
1897, .....	3	24.1	+4.8	.....
1898, .....	3	22.7	—1.4	.....
1899, .....	3	24.3	+1.6	.....
1900, .....	3	26.0	+1.7	.....
1901, .....	3	28.0	+2.0	+8.7
PIANOS AND ORGANS.				
1896, .....	2	35.9	.....	.....
1897, .....	2	35.1	— .8	.....
1898, .....	2	33.5	—1.6	.....
1899, .....	2	27.0	—6.5	.....
1900, .....	2	30.7	+3.7	.....
1901, .....	2	33.1	+2.4	—2.8

# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. wages to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
TINWARE .				
1896, .....	5	22.5	.....	.....
1897, .....	5	22.9	+ .4	.....
1898, .....	5	22.0	— .9	.....
1899, .....	5	21.7	— .3	.....
1900, .....	5	24.2	+2.5	.....
1901, .....	5	26.6	+2.4	+4.1
PAPER MANUFACTORIES.				
1896, .....	8	17.2	.....	.....
1897, .....	8	17.8	+ .6	.....
1898, .....	8	17.8	.....	.....
1899, .....	8	16.2	—1.6	.....
1900, .....	8	16.4	+ .2	.....
1901, .....	8	16.2	— .2	—1.0
WALL PAPER.				
1896, .....	4	13.7	.....	.....
1897, .....	4	12.6	—1.1	.....
1898, .....	4	12.1	— .5	.....
1899, .....	4	11.4	— .7	.....
1900, .....	4	14.2	+2.8	.....
1901, .....	4	15.0	+ .8	+1.3
CIGARS.				
1896, .....	46	25.4	.....	.....
1897, .....	46	25.2	— .2	.....

# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. wages to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
CIGARS—Continued.				
1898, .....	46	25.2	.....	.....
1899, .....	46	25.1	— .1	.....
1900, .....	46	25.6	+ .5	.....
1901, .....	46	26.1	+ .5	+ .7
BOOK BINDING.				
1896, .....	3	38.7	.....	.....
1897, .....	3	40.9	+ 2.2	.....
1898, .....	3	41.7	+ .8	.....
1899, .....	3	41.4	— .3	.....
1900, .....	3	45.3	+ 3.9	.....
1901, .....	3	43.7	— 1.6	+ 5.0
CORDAGE, ROPE AND TWINE.				
1896, .....	5	13.0	.....	.....
1897, .....	5	14.5	+ 1.5	.....
1898, .....	5	13.6	— .9	.....
1899, .....	5	12.7	— .9	.....
1900, .....	5	10.7	— 2.0	.....
1901, .....	5	10.6	— .1	— 2.4
PAPER, PAPER BOXES, ENVELOPES, ETC.				
1896, .....	27	24.1	.....	.....
1897, .....	27	24.9	+ .8	.....
1898, .....	27	24.9	.....	.....
1899, .....	27	27.4	+ 2.5	.....

# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. value of wages to production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
PAPER, PAPER BOXES, ENVELOPES, ETC.—Continued.				
1900, .....	27	24.0	—3.4	.....
1901, .....	27	24.0	.....	—1
POTTERY.				
1896, .....	2	35.1	.....	.....
1897, .....	2	35.4	+ .3	.....
1898, .....	2	32.6	—2.8	.....
1899, .....	2	32.2	— .4	.....
1900, .....	2	33.7	+1.5	.....
1901, .....	2	33.8	+ .1	—1.3
PAVING BRICK.				
1896, .....	7	42.9	.....	.....
1897, .....	7	41.4	—1.5	.....
1898, .....	7	40.3	—1.1	.....
1899, .....	7	42.5	+2.2	.....
1900, .....	7	39.3	—3.2	.....
1901, .....	7	50.1	+10.8	+7.2
BUILDING BRICK.				
1896, .....	35	42.2	.....	.....
1897, .....	35	42.6	+ .4	.....
1898, .....	35	43.8	+1.2	.....
1899, .....	35	41.3	—2.5	.....
1900, .....	35	42.4	+1.1	.....
1901, .....	35	42.6	+ .2	+ .4

# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. wages to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## FIRE BRICK.

1896, .....	18	44.3	.....	.....
1897, .....	18	45.8	+1.5	.....
1898, .....	18	44.0	—1.8	.....
1899, .....	18	45.6	+1.6	.....
1900, .....	18	45.0	— .6	.....
1901, .....	18	50.4	+5.4	+6.1

## SLATE ROOFING, ETC., TONNAGE.

1896, .....	6	64.5	.....	.....
1897, .....	6	52.4	+12.1	.....
1898, .....	6	46.5	—5.9	.....
1899, .....	6	46.9	+ .4	.....
1900, .....	6	53.8	+6.9	.....
1901, .....	6	49.7	—4.1	—14.8

## SLATE ROOFING, ETC., SQUARES.

1896, .....	14	67.3	.....	.....
1897, .....	14	59.8	—7.5	.....
1898, .....	14	62.4	+2.6	.....
1899, .....	14	58.5	—3.9	.....
1900, .....	14	63.6	+5.1	.....
1901, .....	14	63.7	+ .1	—3.6



# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. value of wages to production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
WINDOW GLASS, BOTTLES AND TABLE GOODS.				
1896, .....	22	44.9	.....	.....
1897, .....	22	44.7	— .2	.....
1898, .....	22	44.2	— .5	.....
1899, .....	22	43.5	— .7	.....
1900, .....	22	45.2	+1.7	.....
1901, .....	22	45.5	+ .3	+ .6
GLAZED AND CHROME KID.				
1896, .....	7	11.9	.....	.....
1897, .....	7	12.7	+ .8	.....
1898, .....	7	11.6	—1.1	.....
1899, .....	7	11.7	+ .1	.....
1900, .....	7	11.7	.....	.....
1901, .....	7	10.9	— .8	—1.0
MEN'S, WOMEN'S, MISSES' AND CHILDREN'S SHOES.				
1896, .....	15	23.2	.....	.....
1897, .....	15	23.7	+ .5	.....
1898, .....	15	23.6	— .1	.....
1899, .....	15	23.1	— .5	.....
1900, .....	15	22.8	— .3	.....
1901, .....	15	23.3	+ .5	+ .1
SUSPENDERS.				
1896, .....	2	9.7	.....	.....
1897, .....	2	9.7	.....	.....

# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. wages to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## SUSPENDERS—Continued.

1898, .....	2	10.5	+.8	.....
1899, .....	2	12.7	+2.2	.....
1900, .....	2	12.2	— .5	.....
1901, .....	2	8.8	—3.4	— .9

## HATS AND CAPS.

1896, .....	3	23.1	.....	.....
1897, .....	3	22.9	— .2	.....
1898, .....	3	23.9	+1.0	.....
1899, .....	3	27.5	+3.6	.....
1900, .....	3	23.5	—4.0	.....
1901, .....	3	23.4	— .1	+ .3

## FUR AND FELT HATS.

1896, .....	4	26.6	.....	.....
1897, .....	4	33.0	+6.4	.....
1898, .....	4	34.4	+1.4	.....
1899, .....	4	32.9	—1.5	.....
1900, .....	4	32.4	— .5	.....
1901, .....	4	33.2	+ .8	+6.6

## WOOL HATS.

1896, .....	7	24.1	.....	.....
1897, .....	7	22.0	—2.1	.....
1898, .....	7	22.1	+ .1	.....
1899, .....	7	21.9	— .2	.....
1900, .....	7	23.4	+1.5	.....
1901, .....	7	23.8	+ .4	— .3

# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. wages to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
UMBRELLAS AND PARASOLS.				
1896, .....	4	12.3	.....	.....
1897, .....	4	14.4	+2.1	.....
1898, .....	4	11.7	—2.7	.....
1899, .....	4	11.7	.....	.....
1900, .....	4	11.9	+ .2	.....
1901, .....	4	11.6	— .3	— .7
DRESS TRIMMINGS, BRAIDS, ETC.				
1896, .....	8	24.5	.....	.....
1897, .....	8	25.8	+1.3	.....
1898, .....	8	24.2	—1.6	.....
1899, .....	8	23.0	—1.2	.....
1900, .....	8	24.3	+1.3	.....
1901, .....	8	24.3	.....	— .2
SHIRTS AND SHIRT WAISTS.				
1896, .....	9	25.1	.....	.....
1897, .....	9	25.3	+ .2	.....
1898, .....	9	24.7	— .6	.....
1899, .....	9	25.8	+1.1	.....
1900, .....	9	26.1	+ .3	.....
1901, .....	9	26.8	+ .7	+1.7
NECKWEAR.				
1896, .....	3	19.1	.....	.....
1897, .....	3	17.8	—1.3	.....

# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. wages to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## NECKWEAR—Continued.

1898, .....	3	18.4	+ .6	.....
1899, .....	3	16.9	—1.5	.....
1900, .....	3	16.7	— .2	.....
1901, .....	3	15.9	— .8	—3.2

## COTTON AND WOOLEN CLOTHS.

1896, .....	24	26.1	.....	.....
1897, .....	24	25.6	— .5	.....
1898, .....	24	25.5	— .1	.....
1899, .....	24	23.4	—2.1	.....
1900, .....	24	24.4	+1.0	.....
1901, .....	24	23.7	— .7	—2.4

## CARPETS.

1896, .....	17	21.6	.....	.....
1897, .....	17	21.7	+ .1	.....
1898, .....	17	20.7	—1.0	.....
1899, .....	17	19.8	— .9	.....
1900, .....	17	20.1	+ .3	.....
1901, .....	17	19.2	— .9	—2.4

## COTTON GOODS.

1896, .....	16	29.6	.....	.....
1897, .....	16	29.9	+ .3	.....
1898, .....	16	31.1	+1.2	.....
1899, .....	16	31.2	+ .1	.....

# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. wages to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
COTTON GOODS—Continued.				
1900, .....	16	29.9	—1.3	.....
1901, .....	16	28.4	—1.5	—1.2
WOOLEN AND WORSTED CASSIMERES.				
1896, ... ..	11	21.3	.....	.....
1897, .....	11	20.0	—1.3	.....
1898, .....	11	20.2	+ .2	.....
1899, .....	11	19.0	—1.2	.....
1900, .....	11	20.2	+1.2	.....
1901, .....	11	18.0	—2.2	—3.3
WOOLEN AND WORSTED FABRICS.				
1896, .....	16	20.6	.....	.....
1897, .....	16	20.0	— .6	.....
1898, .....	16	20.0	.....	.....
1899, .....	16	20.0	.....	.....
1900, .....	16	19.3	— .7	.....
1901, .....	16	18.3	—1.0	—2.3
WOOLEN AND WORSTED YARNS.				
1896, .....	12	20.4	.....	.....
1897, .....	12	15.8	—4.6	.....
1898, .....	12	11.8	—4.0	.....
1899, .....	12	10.2	—1.6	.....
1900, .....	12	12.5	+2.3	.....
1901, .....	12	12.9	+ .4	—7.5

# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. wages to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
RUGS, YARNS, ETC.				
1896, .....	5	24.7	.....	.....
1897, .....	5	24.4	— .3	.....
1898, .....	5	25.3	+ .9	.....
1899, .....	5	26.0	+ .7	.....
1900, .....	5	25.8	— .2	.....
1901, .....	5	27.8	+ 2.0	+ 3.1
CARPET YARNS.				
1896, .....	11	15.6	.....	.....
1897, .....	11	13.3	— 2.3	.....
1898, .....	11	13.8	+ .5	.....
1899, .....	11	12.8	.....	.....
1900, .....	11	14.1	+ .3	.....
1901, .....	11	14.8	+ .7	— .8
COTTON YARNS.				
1896, .....	7	16.6	.....	.....
1897, .....	7	17.6	+ 1.0	.....
1898, .....	7	19.2	+ 1.6	.....
1899, .....	7	18.3	— .9	.....
1900, .....	7	16.7	— 1.6	.....
1901, .....	7	17.3	+ .6	+ .7
WORSTED, WOOLEN AND COTTON YARNS.				
1896, .....	10	20.1	.....	.....
1897, .....	10	17.4	— 2.7	.....



# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. wages to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## WORSTED, WOOLEN AND COTTON YARNS—Continued.

1898. ....	10	18.7	+1.3	.....
1899, ...	10	15.9	—2.8	.....
1900, ....	10	14.8	—1.1	.....
1901, ....	10	15.1	+1.3	—5.0

## WOOLEN, BLANKETS, FLANNELS, ETC.

1896, ....	5	20.0	.....	.....
1897, .....	5	21.6	+1.6	.....
1898, ....	5	16.6	—5.0	.....
1899, ....	5	19.7	+3.1	.....
1900, ....	5	19.3	—4	.....
1901, ....	5	17.0	—1.4	—2.1

## LACE GOODS.

1896, ....	3	21.3	.....	.....
1897, . ....	3	20.6	—7	.....
1898, ....	3	22.1	+1.5	.....
1899, ....	3	24.0	+1.9	.....
1900, ....	3	27.8	+3.8	.....
1901, ....	3	26.7	—1.1	+5.4

## CHENILLE GOODS.

1896, ....	3	27.5	.....	.....
1897, ....	3	29.5	+2.0	.....
1898, ....	3	28.9	—6	.....

# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	production. Relative per cent. wages to value of	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
CHENILLE GOODS—Continued.				
1899, .....	3	30.6	+1.7	.....
1900, .....	3	34.6	+4.0	.....
1901, .....	3	34.2	— .4	+6.7
UPHOLSTERY GOODS.				
1896, .....	10	25.2	.....	.....
1897, .....	10	26.7	+1.5	.....
1898, .....	10	27.3	+ .6	.....
1899, .....	10	26.2	—1.1	.....
1900, .....	10	26.7	+ .5	.....
1901, .....	10	27.4	+ .7	+2.2
KNIT GOODS, UNDERWEAR.				
1896, .....	13	20.6	.....	.....
1897, .....	13	20.2	— .4	.....
1898, .....	13	19.6	— .6	.....
1899, .....	13	20.5	+ .9	.....
1900, .....	13	18.7	—1.8	.....
1901, .....	13	19.4	+ .7	—1.2
HOSIERY.				
1896, .....	31	30.2	.....	.....
1897, .....	31	30.5	+ .3	.....
1898, .....	31	30.4	— .1	.....
1899, .....	31	30.7	+ .3	.....
1900, .....	31	30.9	+ .2	.....
1901, .....	31	30.8	— .1	+ .5

# RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—Continued.

COMPARISON OF RELATIVE PER CENT. OF WAGES TO VALUE OF PRODUCTION—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Relative per cent. wages to value of production.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
<b>SILK—BROAD GOODS, THROWN SILK, YARNS, ETC.</b>				
1896, .....	6	16.9	.....	.....
1897, .....	6	16.6	— .3	.....
1898, .....	6	16.3	— .3	.....
1899, .....	6	13.9	— 2.4	.....
1900, .....	6	14.2	+ .3	.....
1901, .....	6	15.6	+ 1.4	— 1.3
<b>SILK—BROAD GOODS AND RIBBONS.</b>				
1896, .....	2	22.4	.....	.....
1897, .....	2	20.1	— 2.3	.....
1898, .....	2	17.8	— 2.3	.....
1899, .....	2	16.8	— 1.0	.....
1900, .....	2	16.7	— .1	.....
1901, .....	2	16.9	+ .2	— 5.5
<b>SILK—RIBBONS.</b>				
1896, .....	4	17.8	.....	.....
1897, .....	4	20.9	+ 3.1	.....
1898, .....	4	20.0	— .9	.....
1899, .....	4	21.0	+ 1.0	.....
1900, .....	4	20.2	— .8	.....
1901, .....	4	22.1	+ 1.9	+ 4.3

## PRODUCTION IN TONS OR QUANTITY.

COMPARISON OF AGGREGATE TOTAL PRODUCTION, IN TONS, OR GIVEN QUANTITY—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

NOTE...In this table the aggregate production, in tons or quantity, by the same establishments for the years 1896, 1897, 1898, 1899, 1900 and 1901 is presented, with the relative increase or decrease, together with the increase or decrease 1901 over 1896. Eighty-eight industries, representing 801 establishments, are considered.

Character of Industry and Years.	Number of establishments considered.	Total production in tons or given quantity.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
<b>STEEL CASTINGS.</b>				
		Tons.		
1896, .....	7	17,362	.....	.....
1897, .....	7	18,313	+951	.....
1898, .....	7	27,786	+9,473	.....
1899, .....	7	34,845	+7,059	.....
1900, .....	7	33,231	—1,614	.....
1901, .....	7	30,501	—2,730	+13,139
<b>STEEL BILLETS, SLABS, BLOOMS, ETC.</b>				
1896, .....	4	429,553	.....	.....
1897, .....	4	674,744	+245,191	.....
1898, .....	4	722,475	+47,731	.....
1899, .....	4	842,183	+119,708	.....
1900, .....	4	675,994	—166,189	.....
1901, .....	4	863,499	+187,505	+433,946
<b>TOOL STEEL.</b>				
1896, .....	3	1,286	.....	.....
1897, .....	3	694	—592	.....
1898, .....	3	1,086	+392	.....
1899, .....	3	1,295	+209	.....

## PRODUCTION IN TONS OR QUANTITY—Continued.

COMPARISON OF AGGREGATE TOTAL PRODUCTION, IN TONS, OR GIVEN QUANTITY—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total production in tons or given quantity.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## TOOL STEEL—Continued.

Tons.

1900, .....	3	1,667	+372	.....
1901, .....	3	2,424	+757	+1,138

## IRON AND STEEL FORGINGS.

1896, .....	7	4,110	.....	.....
1897, .....	7	3,553	—557	.....
1898, .....	7	6,866	+3,313	.....
1899, .....	7	9,813	+2,947	.....
1900, .....	7	9,159	—654	.....
1901, .....	7	9,401	+242	+5,291

## IRON SPECIALTIES.

1896, .....	2	1,209	.....	.....
1897, .....	2	2,510	+1,301	.....
1898, .....	2	1,061	—1,449	.....
1899, .....	2	913	—148	.....
1900, .....	2	1,017	+104	.....
1901, .....	2	1,265	+248	+56

## MALLEABLE IRON.

1896, .....	4	30,888	.....	.....
1897, .....	4	27,466	—3,422	.....
1898, .....	4	38,228	+10,762	.....
1899, .....	4	44,852	+6,624	.....
1900, .....	4	38,963	—5,889	.....
1901, .....	4	33,182	—5,781	+2,294

PRODUCTION IN TONS OR QUANTITY—Continued.

COMPARISON OF AGGREGATE TOTAL PRODUCTION, IN TONS, OR GIVEN QUANTITY—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total production in tons or given quantity.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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WIRE NAILS AND RIVETS.

		Tons.		
1896, .....	4	20,831	.....	.....
1897, .....	4	43,831	+23,000	.....
1898, .....	4	33,170	—10,661	.....
1899, .....	4	37,245	+4,075	.....
1900, .....	4	22,514	—14,731	.....
1901, .....	4	15,159	—7,355	—5,672

TACKS AND SMALL NAILS.

1896, .....	4	1,357	.....	.....
1897, .....	4	1,474	+117	.....
1898, .....	4	1,243	—231	.....
1899, .....	4	2,287	+1,044	.....
1900, .....	4	1,975	—312	.....
1901, .....	4	2,211	+336	+954

WIRE.

1896, .....	5	3,323	.....	.....
1897, .....	5	3,531	+208	.....
1898, .....	5	3,731	+200	.....
1899, .....	5	4,024	+293	.....
1900, .....	5	3,944	—80	.....
1901, .....	5	4,889	+945	+1,566

WIRE ROPE.

1896, .....	2	3,406	.....	.....
1897, .....	2	3,420	+14	.....



## PRODUCTION IN TONS OR QUANTITY—Continued.

COMPARISON OF AGGREGATE TOTAL PRODUCTION, IN TONS, OR GIVEN QUANTITY—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total production in tons or given quantity.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
WIRE ROPE—Continued.				
		Tons.		
1898, .....	2	3,749	+329	.....
1899, .....	2	4,880	+1,131	.....
1900, .....	2	6,443	+1,563	.....
1901, .....	2	6,707	+264	+3,301
WROUGHT IRON PIPE AND TUBES.				
1896, .....	5	281,068	.....	.....
1897, .....	5	297,601	+16,533	.....
1898, .....	5	358,304	+60,703	.....
1899, .....	5	452,513	+94,209	.....
1900, .....	5	295,574	—156,939	.....
1901, .....	5	410,878	+115,304	+129,810
CAST IRON PIPE.				
1896, .....	3	50,730	.....	.....
1897, .....	3	72,030	+21,300	.....
1898, .....	3	79,212	+7,182	.....
1899, .....	3	61,344	—17,868	.....
1900, .....	3	74,456	+13,112	.....
1901, .....	3	78,122	+3,666	+27,392
IRON AND STEEL BRIDGES.				
1896, .....	7	58,396	.....	.....
1897, .....	7	54,013	—4,383	.....
1898, .....	7	73,781	+19,768	.....

# PRODUCTION IN TONS OR QUANTITY—Continued.

COMPARISON OF AGGREGATE TOTAL PRODUCTION, IN TONS, OR GIVEN QUANTITY—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total production in tons or given quantity.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## IRON AND STEEL BRIDGES— Continued.

Tons.

1899, .....	7	81,970	+8,189	.....
1900, .....	7	134,231	+52,261	.....
1901, .....	7	108,276	—25,955	+49,880

## IRON CHAINS.

1896, .....	5	4,877	.....	.....
1897, .....	5	4,898	+21	.....
1898, .....	5	6,307	+1,409	.....
1899, .....	5	6,745	+439	.....
1900, .....	5	6,597	—148	.....
1901, .....	5	5,956	—641	+1,079

## PAPER MANUFACTORIES.

1896, .....	8	63,953	.....	.....
1897, .....	8	59,852	—4,101	.....
1898, .....	8	55,014	—4,838	.....
1899, .....	8	67,929	+12,915	.....
1900, .....	8	71,184	+3,255	.....
1901, .....	8	71,878	+694	+7,925

## WALL PAPER.

Rolls.

1896, .....	4	19,002,000	.....	.....
1897, .....	4	23,748,793	+4,746,793	.....
1898, .....	4	28,867,977	+5,119,184	.....
1899, .....	4	27,458,252	—1,409,725	.....

## PRODUCTION IN TONS OR QUANTITY—Continued.

COMPARISON OF AGGREGATE TOTAL PRODUCTION, IN TONS, OR GIVEN QUANTITY—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total production in tons or given quantity.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## WALL PAPER—Continued.

## Rolls.

1900, .....	4	26,114,145	—1,344,107	.....
1901, .....	4	29,930,030	+3,815,885	+10,928,030

## CIGARS.

## Cigars.

1896, .....	46	308,825,191	.....	.....
1897, .....	46	364,270,636	+55,444,445	.....
1898, .....	46	362,674,423	—1,596,213	.....
1899, .....	46	396,987,894	+34,313,471	.....
1900, .....	46	420,548,723	+23,560,829	.....
1901, .....	46	400,893,737	—19,654,986	+92,068,546

## BUILDING BRICK.

## Bricks.

1896, .....	35	223,749,969	.....	.....
1897, .....	35	214,165,868	—9,584,101	.....
1898, .....	35	238,084,927	+23,919,059	.....
1899, .....	35	238,429,295	—655,632	.....
1900, .....	35	223,155,408	—15,273,887	.....
1901, .....	35	213,696,165	—9,459,243	—10,053,804

## FIRE BRICK.

## Tons.

1896, .....	18	329,925	.....	.....
1897, .....	18	330,914	+989	.....
1898, .....	18	408,796	+77,882	.....
1899, .....	18	538,099	+129,303	.....

# PRODUCTION IN TONS OR QUANTITY—Continued.

COMPARISON OF AGGREGATE TOTAL PRODUCTION, IN TONS, OR GIVEN QUANTITY—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total production in tons or given quantity.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## FIRE BRICK—Continued.

Tons.

1900, .....	18	666,863	+128,764	.....
1901, .....	18	693,977	+27,114	+364,052

## SLATE ROOFING, ETC., TON- NAGE.

1896, .....	6	33,936	.....	.....
1897, .....	6	43,595	+9,659	.....
1898, .....	6	37,109	—6,486	.....
1899, .....	6	35,560	—1,549	.....
1900, .....	6	59,951	+24,391	.....
1901, .....	6	68,902	+8,951	+34,966

## SLATE ROOFING, ETC., SQUARES.

Squares.

1896, .....	14	180,098	.....	.....
1897, .....	14	223,844	+43,746	.....
1898, .....	14	273,928	+50,084	.....
1899, .....	14	287,826	+13,898	.....
1900, .....	14	265,796	—22,030	.....
1901, .....	14	286,526	+20,730	+166,428

## GLAZED AND CHROME KID.

Dozens.

1896, .....	7	887,242	.....	.....
1897, .....	7	1,139,807	+252,565	.....
1898, .....	7	1,332,785	+192,978	.....
1899, .....	7	1,688,109	+355,324	.....

## PRODUCTION IN TONS OR QUANTITY—Continued.

COMPARISON OF AGGREGATE TOTAL PRODUCTION, IN TONS, OR GIVEN QUANTITY—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total production in tons or given quantity.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
GLAZED AND CHROME KID— Continued.				
		Dozens.		
1900, .....	7	1,487,228	—200,881	.....
1901, .....	7	1,851,886	+364,658	+964,644
MEN'S, WOMEN'S, MISSES AND CHILDREN'S SHOES.				
		Pairs.		
1896, .....	15	3,542,637	.....	.....
1897, .....	15	3,855,618	+312,981	.....
1898, .....	15	3,739,548	—116,070	.....
1899, .....	15	4,137,680	+398,132	.....
1900, .....	15	3,935,684	—201,996	.....
1901, .....	15	3,914,210	—21,474	+371,573
SUSPENDERS.				
		Dozens.		
1896, .....	2	142,000	.....	.....
1897, .....	2	152,000	+10,000	.....
1898, .....	2	165,000	+13,000	.....
1899, .....	2	180,500	+15,500	.....
1900, .....	2	266,000	+85,500	.....
1901, .....	2	450,000	+184,000	+308,060
HATS AND CAPS.				
1896, .....	3	65,867	.....	.....
1897, .....	3	103,934	+38,067	.....
1898, .....	3	100,663	—3,271	.....
1899, .....	3	96,229	—4 434	.....

## PRODUCTION IN TONS OR QUANTITY—Continued.

COMPARISON OF AGGREGATE TOTAL PRODUCTION, IN TONS, OR GIVEN QUANTITY—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total production in tons or given quantity.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## HATS AND CAPS—Continued.

Dozens.

1900, .....	3	111,091	+14,862	.....
1901, .....	3	139,964	+28,873	+74,097

## FUR AND FELT HATS.

1896, .....	4	47,026	.....	.....
1897, .....	4	51,025	+3,999	.....
1898, .....	4	55,925	+4,900	.....
1899, .....	4	64,127	+8,202	.....
1900, .....	4	78,437	+14,310	.....
1901, .....	4	90,025	+11,588	+42,999

## WOOL HATS.

1896, .....	7	171,988	.....	.....
1897, .....	7	195,956	+23,968	.....
1898, .....	7	201,718	+5,762	.....
1899, .....	7	208,122	+6,404	.....
1901, .....	7	271,322	+63,200	.....
1902, .....	7	241,180	—30,142	+69,192

## UMBRELLAS AND PARASOLS.

Pieces.

1896, .....	4	825,571	.....	.....
1897, .....	4	889,043	+63,472	.....
1898, .....	4	889,252	+209	.....
1899, .....	4	942,826	+53,574	.....
1900, .....	4	865,998	—76,828	.....
1901, .....	4	979,913	+113,915	+154,342



# PRODUCTION IN TONS OR QUANTITY—Continued.

COMPARISON OF AGGREGATE TOTAL PRODUCTION, IN TONS, OR GIVEN QUANTITY—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total production in tons or given quantity.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
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## SHIRTS AND SHIRT WAISTS.

		Dozens.		
1896, .....	9	196,648	.....	.....
1897, .....	9	190,793	—5,855	.....
1898, .....	9	337,213	+146,420	.....
1899, .....	9	393,622	+56,409	.....
1900, .....	9	398,536	+4,914	.....
1901, .....	9	389,018	—9,518	+192,370

## CARPETS.

		Yards.		
1896, .....	17	10,752,952	.....	.....
1897, .....	17	13,612,975	+2,860,023	.....
1898, .....	17	12,904,587	—708,388	.....
1899, .....	17	15,648,813	+2,744,226	.....
1900, .....	17	13,510,867	—2,137,946	.....
1901, .....	17	14,978,827	+1,467,960	+4,225,875

## WOOLEN AND WORSTED YARNS.

		Pounds.		
1896, .....	12	9,334,353	.....	.....
1897, .....	12	13,427,749	+4,093,396	.....
1898, .....	12	9,307,876	—4,119,873	.....
1899, .....	12	9,705,579	+397,703	.....
1900, .....	12	9,383,095	—322,484	.....
1901, .....	12	9,156,971	—226,124	—177,382

# PRODUCTION IN TONS OR QUANTITY—Continued.

COMPARISON OF AGGREGATE TOTAL PRODUCTION, IN TONS, OR GIVEN QUANTITY—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of establishments considered.	Total production in tons or given quantity.	Increase(+) or decrease (—) as compared with the preceding year.	Increase (+) or decrease (—) 1901 as compared with 1896.
CARPET YARNS.				
		Pounds.		
1896, .....	11	10,789,500	.....	.....
1897, .....	11	13,882,000	+3,092,500	.....
1898, .....	11	11,499,606	—2,382,394	.....
1899, .....	11	15,271,761	+3,772,155	.....
1900, .....	11	14,337,344	—934,417	.....
1901, .....	11	14,603,056	+265,712	+3,813,556
COTTON YARNS.				
1896, .....	7	7,753,685	.....	.....
1897, .....	7	8,278,160	+524,475	.....
1898, .....	7	9,070,922	+792,762	.....
1899, .....	7	9,278,304	+207,382	.....
1900, .....	7	8,941,662	—336,642	.....
1901, .....	7	7,935,951	—1,005,711	+182,266
WORSTED WOOLEN AND COTTON YARNS.				
1896, .....	10	6,127,333	.....	.....
1897, .....	10	7,316,935	+1,189,602	.....
1898, .....	10	6,546,001	—770,934	.....
1899, .....	10	7,375,619	+829,618	.....
1900, .....	10	7,076,277	—299,342	.....
1901, .....	10	7,151,220	+74,943	+1,023,887
HOSIERY.				
		Dozens.		
1896, .....	31	4,463,537	.....	.....
1897, ..	31	5,366,913	+903,376	.....

## PRODUCTION IN TONS OR QUANTITY—Continued.

COMPARISON OF AGGREGATE TOTAL PRODUCTION, IN TONS, OR GIVEN QUANTITY—SAME ESTABLISHMENTS, FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Total produc- tion in tons or given quantity.	Increase(+) or decrease (-) as com- pared with the preced- ing year.	Increase (+) or de- crease(-) 1901 as compared with 1896.
HOSIERY—Continued.				
		Dozens.		
1898, .....	31	7,181,631	+1,814,718	.....
1899, .....	31	5,934,516	—1,247,115	.....
1900, .....	31	5,939,122	+4,606	.....
1901, .....	31	6,166,032	+226,910	+1,702,495
SILK—BROAD GOODS AND RIB- BONS.				
		Yards.		
1896, .....	2	2,126,571	.....	.....
1897, .....	2	3,304,064	+1,177,493	.....
1898, .....	2	3,712,633	+408,569	.....
1899, .....	2	5,668,697	+1,956,064	.....
1900, .....	2	6,388,130	+719,433	.....
1901, .....	2	3,163,175	—3,224,955	+1,036,604
SILK—RIBBONS.				
1896, .....	4	10,319,945	.....	.....
1897, .....	4	9,934,072	—385,873	.....
1898, .....	4	13,346,776	+3,412,704	.....
1899, .....	4	15,984,362	+2,637,586	.....
1900, .....	4	15,209,686	—774,676	.....
1901, .....	4	23,694,069	+8,484,383	+13,374,124

## YEAR 1896.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

No.	Character of Industries.	Number of establishments considered.	Capital invested in plants and working capital.	Cost of basic material.	Average number of days in operation.	Number of workmen employed.
1.	Steel castings, .....	7	\$5,744,982	\$418,609	290	1,016
2.	Steel billets, slabs, blooms, etc., .....	4	13,137,175	5,724,832	204	1,392
3.	Tool steel, etc., .....	3	480,000	146,601	267	160
4.	Iron and steel forgings, .....	7	431,000	141,286	256	254
5.	Iron specialties, .....	2	35,000	47,113	301	37
6.	Malleable iron, .....	4	440,000	590,308	292	1,575
7.	Bolts, nuts, etc., .....	8	1,885,950	600,739	235	942
8.	Wire nails, rivets, etc., .....	4	1,005,000	521,603	241	499
9.	Tacks and small nails, .....	4	163,500	48,253	226	118
10.	Wire, .....	5	480,000	118,055	285	97
11.	Wire rope, .....	2	690,000	292,275	302	158
12.	Wire goods, .....	5	150,950	45,611	296	194
13.	Wagon and carriage axles and springs, .....	6	594,475	170,988	254	353
14.	Scales, etc., .....	4	166,000	79,428	276	113
15.	Stoves, ranges, heaters, etc., .....	37	5,457,362	843,414	209	3,447
16.	Bath boilers, tanks, etc., ....	2	52,820	33,394	309	26
17.	Hardware specialties, .....	14	3,077,418	637,416	260	2,509
18.	Edge tools, .....	12	1,675,197	453,478	246	818
19.	Wrenches, picks, etc., .....	5	564,000	118,234	240	248
20.	Locomotives and cars built and repaired, .....	3	1,464,400	3,738,754	273	6,254
21.	Wrought iron pipe and tubes, .....	5	13,555,000	7,973,945	283	5,324
22.	Cast iron pipes, .....	3	340,000	573,580	303	507
23.	Brass, copper and bronze goods, .....	19	1,853,192	1,142,796	295	1,210
24.	Iron and steel bridges, .....	7	961,050	2,008,501	294	1,169
25.	Locomotives, stationary engines, etc., .....	9	11,222,730	4,229,510	306	5,587
26.	Engines, boilers, etc., .....	10	3,908,988	1,557,093	295	1,922
27.	Cars, springs, axles and railway supplies, .....	12	6,310,325	2,270,778	260	2,240
28.	Iron vessels and engines, ....	3	7,039,973	1,923,035	306	4,044
29.	Boilers, tanks, stacks, etc.,...	21	1,544,562	761,415	286	1,161

## YEAR 1896.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

Aggregate wages paid to workmen.	Market value of production.	Average value of production for each workman employed.	Average yearly earn-	Average daily wage.	Relative per cent. basic material to value of production.	Relative per cent. wages to value of production.	Total production in tons or given quantity.	No.
\$463,012	\$1,496,055	\$1,472 49	\$455 72	\$1 57	27.9	30.9	17,362 tons.	1
621,895	7,149,210	5,135.93	446 83	2 19	80.0	8.7	429,553	2
88,646	433,801	2,711 26	554 04	2 08	33.8	20.4	1,286	3
121,567	366,163	1,047 89	478 61	1 87	38.6	33.2	4,110	4
17,700	77,966	2,107 19	478 38	1 59	60.4	22.8	1,209	5
709,933	1,933,107	1,227 37	450 75	1 54	30.5	36.7	30,888	6
361,981	1,269,306	1,347 46	384 27	1 64	47.3	28.5	.....	7
158,859	924,754	1,853.21	318 35	1 32	56.4	17.2	20,831	8
34,122	115,749	980 92	289 18	1 28	41.7	29.5	1,357	9
44,882	228,163	2,352 20	462 70	1 62	51.7	19.7	3,323	10
70,108	615,004	3,892 43	443 72	1 47	47.5	11.4	3,406	11
56,708	217,040	1,118 66	292 31	99	21.0	26.1	.....	12
171,015	544,482	1,542 44	484 46	1 90	31.4	31.4	.....	13
66,550	233,592	2,067 18	588 94	2 13	34.0	28.5	.....	14
1,626,876	4,111,827	1,192 84	471 97	2 26	20.5	39.6	.....	15
12,091	61,186	2,353 31	465 04	1 50	54.6	19.8	.....	16
1,004,650	2,382,624	949 63	400 42	1 54	26.8	42.2	.....	17
356,401	1,083,068	1,324 04	435 70	1 77	41.9	32.9	.....	18
106,369	363,054	1,463 93	428 91	1 79	32.5	29.3	.....	19
3,035,897	6,983,962	1,116 72	485 43	1 78	54.2	43.4	.....	20
2,170,688	11,907,420	2,236 50	407 72	1 44	66.9	18.2	281,068	21
209,338	862,648	1,701 48	412 89	1 37	66.5	24.3	50,730	22
496,402	2,218,718	1,833 65	410 25	1 39	51.5	22.4	.....	23
590,081	3,429,136	2,933 39	504 77	1 72	58.5	17.2	58,396	24
3,137,295	8,792,061	1,573 66	561 53	1 84	48.1	35.6	.....	25
1,008,538	3,230,705	1,680 91	522 13	1 77	48.2	31.6	.....	26
971,616	4,603,466	2,055 12	433 75	1 67	49.3	21.1	.....	27
2,320,747	4,991,255	1,234 24	573 87	1 88	38.5	46.5	.....	28
542,277	1,951,211	1,680 63	467 08	1 63	39.0	27.8	.....	29

## YEAR 1896.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

No.	Character of Industries.	Number of establishments considered.	Capital invested in plants and working capital.	Cost of basic material.	Average number of days in operation.	Number of workmen employed.
30.	Machinery, .....	21	8,798,408	1,741,304	301	3,721
31.	Foundries and machine shops,	25	3,041,550	875,986	286	2,127
32.	Files, etc., .....	2	510,000	95,440	275	331
33.	Saws, .....	3	310,000	37,000	229	56
34.	Plumbers' supplies, .....	3	2,105,078	*	281	960
35.	Electrical supplies, .....	4	12,815,696	1,337,362	289	2,528
36.	Shovels, spades, scoops, etc.,	8	651,100	313,871	210	545
27.	Safes and vault doors, .....	2	80,000	66,274	307	123
38.	Metal and metallic goods, ...	3	280,400	47,136	234	194
39.	Building and structural iron work, .....	2	823,000	522,584	301	752
40.	Iron chains, .....	5	253,542	127,022	264	231
41.	Iron fences and railings, ....	7	40,500	47,937	293	79
42.	Agricultural implements, ....	12	905,000	1,025,789	287	1,295
43.	Steam pumps, .....	2	280,000	146,725	307	153
44.	Bicycles, .....	3	200,000	364,739	268	222
45.	Pianos and organs, .....	2	51,000	32,563	271	80
46.	Tinware, .....	5	372,700	218,233	301	284
47.	Paper manufactories, .....	8	4,257,961	1,583,061	262	1,521
48.	Wall paper, .....	4	310,000	420,913	258	362
49.	Cigars, .....	46	2,805,477	2,703,269	287	6,559
50.	Book binding, .....	3	125,000	62,699	301	133
51.	Cordage, ropes, twine, etc.,	5	3,260,000	3,362,991	288	2,055
52.	Paper, paper boxes, envelopes, etc., .....	27	1,491,067	936,025	297	1,826
53.	Pottery, .....	2	510,000	68,215	302	146
54.	Paving brick, .....	7	481,200	32,949	255	437
55.	Building brick, .....	35	3,630,700	174,412	229	1,930
56.	Fire brick, .....	18	2,240,600	423,138	283	1,868
57.	Slate roofing, etc., tonnage,..	6	1,021,451	32,540	229	830
58.	Slate roofing, etc., squares,..	14	511,916	55,722	238	1,254
59.	Window glass, bottles, and table goods, .....	22	13,439,300	1,511,890	240	7,110
60.	Glazed and chrome kid, ...	7	3,857,983	5,635,016	299	2,725



## YEAR 1896.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

Aggregate wages paid to workmen.	Market value of production.	Average value of production for each workman employed.	Average yearly earnings.	Average daily wage.	Relative per cent. basic material to value of production.	Relative per cent. wages to value of production.	Total production in tons or given quantity.	No.
1,955,967	5,397,999	1,450 69	525 65	1 75	32.4	36.2	.....	30
957,628	2,643,208	1,242 69	450 22	1 57	33.1	36.2	.....	31
108,895	321,222	970 46	328 99	1 20	29.7	33.9	.....	32
25,745	88,186	1,574 75	459 73	2 01	42.0	29.0	.....	33
418,864	1,078,000	1,122 92	436 32	1 55	....	38.9	.....	34
1,276,087	3,653,461	1,445 20	504 78	1 75	36.6	34.9	.....	35
217,581	813,573	1,492 80	399 23	1 90	38.6	26.8	.....	36
54,556	151,546	1,183 95	426 22	1 39	43.7	36.0	.....	37
58,892	161,989	834 99	203 56	1 29	29.1	36.3	.....	38
382,148	1,195,156	1,589 30	508 18	1 60	43.8	32.0	.....	39
92,526	331,059	1,433 15	396 22	1 50	38.4	27.7	4,877 tons.	40
37,512	119,501	1,512 67	474 84	1 62	40.1	31.4	.....	41
575,390	2,251,507	1,738 62	444 32	1 55	45.6	25.6	.....	42
121,368	334,056	2,183 31	793 26	2 58	43.9	36.3	.....	43
117,134	606,001	2,729 23	527 63	1 91	60.2	19.3	.....	44
33,894	94,327	1,179 09	423 67	1 56	34.5	35.9	.....	45
107,539	477,000	1,679 57	378 66	1 26	45.8	22.5	.....	46
580,874	3,370,998	2,216 30	381 90	1 46	47.0	17.2	63,953	47
116,068	844,811	2,333 73	320 63	1 24	49.8	13.7	19,002,000 rolls.	48
1,813,388	7,138,707	1,088 40	276 47	96	37.9	25.4	308,825,191 cigars.	49
64,957	167,856	1,216 35	470 70	1 56	37.3	38.7	.....	50
618,977	4,777,490	2,324 81	301 21	1 05	70.4	13.0	.....	51
494,654	2,009,846	1,100 68	270 89	91	46.6	24.1	.....	52
72,562	206,732	1,415 97	497 00	1 64	32.9	35.1	.....	53
142,710	333,078	762 19	326 54	1 28	9.9	42.9	35,269,988 brick.	54
662,481	1,569,682	809 53	341 66	1 49	11.1	42.2	223,749,969 brick.	55
727,162	1,639,926	877 90	389 26	1 37	25.8	44.3	329,925 tons.	56
251,993	390,376	470 33	303 61	1 33	8.3	64.5	33,936 tons.	57
397,384	590,366	470 79	316 89	1 33	9.4	67.3	180,098 squares.	58
2,690,298	5,991,102	842 63	378 38	1 58	25.2	44.9	.....	59
962,342	8,049,657	2,954 00	353 15	1 18	70.0	11.9	887,242 dozen.	60

## YEAR 1896.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

No.	Character of Industries.	Number of establishments considered.	Capital invested in plants and working capital.	Cost of basic material.	Average number of days in operation.	Number of workmen employed.
61.	Men's, women's, misses and children's shoes, .....	15	2,193,113	2,853,067	281	3,401
62.	Suspenders, .....	2	82,000	200,936	295	110
63.	Hats and caps, .....	3	273,592	284,490	284	490
64.	Fur and felt hats, .....	4	2,773,726	443,621	307	963
65.	Wool hats, .....	7	338,997	270,432	274	395
66.	Umbrellas and parasols, .....	4	407,435	656,219	307	589
67.	Dress trimmings, braids, etc., .....	8	1,158,296	536,719	287	1,104
68.	Shirts and shirt waists, .....	9	905,500	984,847	286	1,804
69.	Neckwear, .....	3	135,000	217,642	308	190
70.	Cotton and woolen cloths, ..	24	3,313,847	2,904,386	269	4,463
71.	Carpets, .....	17	3,150,625	2,121,394	264	2,263
72.	Cotton goods, .....	16	2,767,649	1,442,767	262	2,807
73.	Woolen and worsted cassimeres, .....	11	1,297,633	1,034,784	270	1,373
74.	Woolen and worsted fabrics, ..	16	2,969,836	2,037,245	247	2,783
75.	Woolen and worsted yarn, ..	12	2,669,270	1,211,445	248	1,526
76.	Rugs, yarns, etc., .....	5	5,360,733	1,954,855	256	3,134
77.	Carpet yarns, .....	11	953,500	839,240	265	563
78.	Cotton yarns, .....	7	1,240,209	760,547	265	695
79.	Worsted, woolen and cotton yarns, .....	10	2,205,274	1,370,289	245	1,634
80.	Woolen blankets, flannels, etc., .....	5	669,730	620,465	304	717
81.	Lace goods .....	3	741,000	190,499	274	763
82.	Chenille goods, .....	3	470,000	297,395	279	610
83.	Upholstery goods, .....	10	1,857,322	1,427,820	294	1,933
84.	Knit goods, underwear, .....	13	1,750,000	1,759,305	271	2,333
85.	Hosiery, .....	31	1,997,318	1,626,945	256	4,757
86.	Silk, broad goods, thrown-silk, yarns, etc., .....	6	1,574,700	2,331,078	275	2,294
87.	Silk, broad goods and ribbons, .....	2	1,650,000	700,000	301	1,300
88.	Silk—Ribbons, .....	4	311,882	309,883	298	431
Total, .....		801	\$200,100,865	\$92,612,814	270	131,260

## YEAR 1896.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

Aggregate wages paid to workmen.	Market value of production.	Average value of production for each workman employed.	Average yearly earnings.	Average daily wage.	Relative per cent. basic material to value of production.	Relative per cent. wages to value of production.	Total production in tons or given quantity.	No.
1,173,935	5,055,796	1,486 56	345 17	1 23	56.4	23.2	3,542,637 pairs.	61
30,936	319,100	2,900 91	281 24	95	63.0	9.7	142,000 dozen.	62
121,160	525,607	1,285 10	296 23	1 22	54.1	23.1	65,867 dozen.	63
385,170	1,447,818	1,503 45	399 97	1 30	30.6	26.6	47,026 dozen.	64
125,792	521,966	1,321 43	318 46	1 16	51.8	24.1	171,988 dozen.	65
136,441	1,109,989	1,884 53	231 65	75	59.1	12.3	825,571 pieces.	66
299,043	1,218,500	1,103 71	270 87	94	44.0	24.5	.....	67
527,371	2,105,007	1,166 85	292 33	1 02	46.8	25.1	196,648 dozen.	68
72,910	381,745	2,009 18	383 74	1 25	57.0	19.1	.....	69
1,413,449	5,444,181	1,219 85	317 82	1 18	53.3	26.1	.....	70
784,416	3,632,760	1,605 29	346 63	1 31	58.7	21.6	10,752,952 yards.	71
794,137	2,680,912	955 08	282 91	1 08	53.8	29.6	.....	72
419,961	1,970,251	1,435 00	305 88	1 13	52.5	21.3	.....	73
788,163	3,821,846	1,373 28	283 21	1 14	53.3	20.6	.....	74
411,043	2,012,851	1,319 04	269 36	1 09	60.2	20.4	9,334,353 pounds.	75
1,011,165	4,087,237	1,304 16	322 64	1 25	47.8	24.7	.....	76
189,053	1,213,783	2,155 92	335 80	1 27	69.1	15.6	10,789,500 pounds.	77
188,970	1,137,430	1,636 59	271 90	1 03	66.9	16.6	7,753,685 pounds.	78
462,651	2,304,716	1,410 47	283 14	1 16	59.5	20.1	6,127,333 pounds.	79
257,057	1,282,412	1,788 58	358 52	1 18	48.4	20.0	.....	80
193,765	909,239	1,191 73	253 95	93	20.9	21.3	.....	81
138,438	502,678	824 06	226 95	81	59.2	27.5	.....	82
674,424	2,674,368	1,379 90	348 00	1 18	53.4	25.2	.....	83
611,923	2,978,552	1,276 70	262 29	97	59.1	20.6	.....	84
1,130,215	3,744,935	787 25	237 59	93	43.4	30.2	4,463,537 dozens.	85
579,144	3,423,925	1,492 56	252 46	92	68.1	16.9	.....	86
325,323	1,450,181	1,115 52	250 25	83	48.3	22.4	2,176,571 yards.	87
125,802	705,120	1,636 01	291 88	98	43.9	17.8	10,319,945 yards.	88
\$50,084,768	\$188,038,106	\$1,432 56	\$381 56	\$1 41	49.2	26.6	.....	

YEAR 1897.

RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

No.	Character of Industries.	Number of establishments considered.	Capital invested in plants and working capital.	Cost of basic material.	Average number of days in operation.	Number of workmen employed.
1.	Steel castings, .....	7	\$5,316,197	\$402,115	310	1,068
2.	Steel billets, slabs, blooms, etc., .....	4	13,218,900	7,363,930	391	1,278
3.	Tool steel, etc., .....	3	608,000	74,610	242	159
4.	Iron and steel forgings, .....	7	430,000	122,710	281	244
5.	Iron specialties, .....	2	45,000	77,228	301	45
6.	Malleable iron, .....	4	493,925	455,890	292	1,404
7.	Bolts, nuts, etc., .....	8	1,918,214	591,791	262	966
8.	Wire nails, rivets, etc., .....	4	1,015,000	884,350	250	644
9.	Tacks and small nails, .....	4	163,500	40,862	209	114
10.	Wire, .....	5	482,100	108,939	265	105
11.	Wire rope, .....	2	700,000	230,111	303	166
12.	Wire goods, .....	5	154,450	58,563	300	215
13.	Wagon and carriage axles and springs .....	6	594,475	167,911	276	353
14.	Scales, etc., .....	4	171,000	83,826	285	122
15.	Stoves, ranges, heaters, etc.,	37	5,520,359	843,713	228	3,543
16.	Bath boilers, tanks, etc., ....	2	54,000	31,163	305	28
17.	Hardware specialties, .....	14	3,246,189	668,089	270	2,643
18.	Edge tools, .....	12	1,613,064	223,034	227	827
19.	Wrenches, picks, etc., .....	5	571,000	152,785	266	293
20.	Locomotives and cars built and repaired, .....	3	1,464,400	3,276,309	282	5,742
21.	Wrought iron pipe and tubes,	5	13,505,000	7,101,673	298	5,110
22.	Cast iron pipe, .....	3	613,059	767,967	302	615
23.	Brass, copper and bronze goods, .....	19	1,845,192	1,117,888	294	1,185
24.	Iron and steel bridges, .....	7	961,050	1,731,721	298	1,177
25.	Locomotives, stationery engines, etc., .....	9	11,643,157	3,933,971	306	5,651
26.	Engines, boilers, etc., .....	10	3,924,988	1,325,287	294	1,690
27.	Cars, springs, axles and railway supplies, .....	12	5,840,116	1,938,862	280	2,366
28.	Iron vessels and engines, ....	3	7,274,993	2,020,859	305	3,447
29.	Boilers, tanks, stacks, etc.,..	21	1,624,265	863,908	285	1,128

## YEAR 1897.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

Aggregate wages paid to workmen.	Market value of production.	Average value of production for each workman employed.	Average yearly earnings.	Average daily wage.	Relative per cent. basic material to value of production.	Relative per cent. wages to value of production.	Total production in tons or given quantity.	No.
\$478,303	\$1,391,020	\$1,302 45	\$447 85	\$1 44	28.9	34.4	18,313 tons.	1
630,474	10,511,198	8,224 72	493 33	1 70	70.0	6.0	674,744 tons.	2
74,319	270,029	1,698 30	467 42	1 93	27.6	27.5	694 tons.	3
120,823	315,364	1,292 28	495 18	1 76	38.9	38.3	3,553 tons.	4
22,700	119,167	2,648 16	504 44	1 68	64.8	19.1	2,510 tons.	5
647,054	1,627,267	1,159 02	460 86	1 58	28.0	39.8	27,466 tons.	6
308,126	1,221,990	1,265 00	318 97	1 22	48.4	25.2	.....	7
247,270	1,494,842	2,321 18	383 96	1 54	59.2	16.5	43,831 tons.	8
31,752	107,112	939 58	278 53	1 33	48.1	29.6	1,474 tons.	9
39,962	222,399	2,118 09	380 59	1 44	49.0	18.0	3,531	10
74,810	596,192	3,591 52	450 67	1 49	38.6	12.5	3,420 tons.	11
66,854	259,311	1,206 10	810 95	1 03	22.6	25.8	.....	12
179,198	554,784	1,571 63	507 64	1 84	30.3	32.3	.....	13
69,185	249,765	2,047 25	567 09	1 99	33.6	27.7	.....	14
1,647,548	4,177,453	1,179 07	465 01	2 04	20.2	39.4	.....	15
12,498	63,699	2,274 97	446 36	1 46	48.9	19.6	.....	16
1,053,746	2,686,482	1,016 45	398 69	1 48	24.9	39.2	.....	17
304,988	781,832	945 38	368 79	1 62	28.5	39.0	.....	18
123,034	462,043	1,576 94	419 91	1 58	33.0	26.6	.....	19
3,019,356	6,534,498	1,138 02	524 84	1 86	50.2	46.2	.....	20
2,045,620	11,341,566	2,219 49	400 32	1 34	62.6	18.0	297,601 tons.	21
250,934	1,184,240	1,952 59	408 02	1 35	64.8	21.2	72,030 tons.	22
482,438	2,001,110	1,688 07	407 11	1 38	55.9	24.1	.....	23
564,817	3,115,371	2,646 87	479 88	1 61	55.6	18.1	54,013 tons.	24
3,032,837	8,531,117	1,509 67	536 69	1 79	46.1	35.6	.....	25
840,896	2,658,616	1,573 15	497 57	1 69	49.9	31.6	.....	26
928,180	4,359,164	1,890 35	402 51	1 44	44.5	21.3	.....	27
1,881,993	4,588,448	1,331 14	545 98	1 79	44.0	41.0	.....	28
535,025	1,904,346	1,688 25	474 32	1 66	45.4	28.1	.....	29



## YEAR 1897.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

No.	Character of Industries.	Number of estab- lishments considered.	Capital in- vested in plants and working capital.	Cost of basic material.	Average number of days in operation.	Number of workmen employed.
30.	Machinery, .....	21	\$8,921,924	\$1,698,519	509	3,853
31.	Foundries and machine shops,	25	3,062,486	1,049,859	295	2,101
32.	Files, etc., .....	2	510,000	92,201	266	346
33.	Saws, .....	3	335,000	26,812	210	50
34.	Plumbers' supplies, .....	3	2,043,751	*	269	921
35.	Electrical supplies, .....	4	12,848,743	1,365,199	297	2,173
36.	Shovels, spades, scoops, etc.,	8	651,100	276,019	219	511
37.	Safes and vault doors, .....	2	68,000	63,173	301	125
38.	Metal and metallic goods, ...	3	280,400	50,060	258	207
39.	Building and structural iron work, .....	2	823,000	686,899	302	662
40.	Iron chains, .....	5	258,542	126,244	272	231
41.	Iron fences and railings, ....	7	42,500	58,623	298	100
42.	Agricultural implements, ....	12	1,907,000	1,027,645	293	1,322
43.	Steam pumps, .....	2	376,974	127,524	307	140
44.	Bicycles, .....	3	253,000	461,607	280	255
45.	Pianos and organs, .....	2	51,000	37,083	292	77
46.	Tinware, .....	5	374,000	216,243	301	275
47.	Paper manufactories, .....	8	4,425,013	1,451,820	277	1,474
48.	Wall paper, .....	4	395,000	499,158	283	381
49.	Cigars, .....	46	3,025,250	3,274,003	291	7,301
50.	Book binding, .....	3	126,500	62,018	280	137
51.	Cordage, ropes, twine, etc.,	5	3,260,000	3,484,048	317	2,119
52.	Paper, paper boxes, en- velopes, etc., .....	27	1,504,284	967,556	301	1,911
53.	Pottery, .....	2	560,000	56,290	287	145
54.	Paving brick, .....	7	521,500	25,156	247	429
55.	Building brick, .....	35	3,661,347	170,107	227	1,852
56.	Fire brick, .....	18	2,421,783	382,434	281	1,928
57.	Slate roofing, etc., tonnage,..	6	1,041,800	36,721	226	830
58.	Slate roofing, etc., squares,..	14	513,914	66,443	239	1,354
59.	Window glass, bottles, and table goods, .....	22	13,454,382	1,623,801	263	7,151
60.	Glazed and chrome kid, ...	7	4,068,915	7,036,904	301	3,255
61.	Men's, women's, misses and children's shoes, .....	15	2,254,701	3,085,003	292	3,514

\*Incomplete returns of value of basic materials.



## YEAR 1897.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

Aggregate wages paid to workmen.	Market value of production	Average value of production for each workman employed.	Average yearly earnings.	Average daily wage.	Relative per cent. basic material to value of production.	Relative per cent. wages to value of production.	Total production in tons or given quantity.	No.
\$1,970,570	\$5,451,809	\$1,414 95	\$511 44	\$1 66	31.2	36.1	.....	30
995,718	2,965,528	1,411 48	473 93	1 61	35.4	33.6	.....	31
110,805	329,533	952 40	320 24	1 20	28.0	33.6	.....	32
21,557	71,437	1,428 75	431 14	2 05	37.5	30.2	.....	33
377,194	962,000	1,044 52	409 55	1 52	...	39.2	.....	34
1,184,647	3,463,804	1,594 02	545 17	1 84	39.4	34.2	.....	35
202,067	803,048	1,571 52	395 43	1 81	34.4	25.2	.....	36
59,906	157,476	1,259 81	479 25	1 59	40.1	38.0	.....	37
65,704	184,101	889 37	317 41	1 23	27.2	35.7	.....	38
344,442	1,249,288	1,887 14	520 31	1 72	55.0	27.6	.....	39
96,671	336,049	1,456 06	418 49	1 54	37.6	28.8	4,898 tons.	40
48,923	145,641	1,456 41	489 23	1 64	40.3	33.6	.....	41
590,787	2,434,451	1,841 49	446 81	1 53	42.2	24.3	.....	42
103,105	249,488	1,782 06	736 46	2 40	51.1	41.3	.....	43
155,444	645,714	2,522 31	609 59	2 05	71.5	24.1	.....	44
33,542	95,599	1,241 54	435 61	1 49	38.8	35.1	.....	45
106,907	467,000	1,698 18	388 75	1 29	46.3	22.9	.....	46
588,144	3,310,376	2,245 85	399 01	1 44	43.9	17.8	59,852 tons.	47
124,043	988,000	2,593 18	325 57	1 15	50.5	12.6	23,748,793 rolls.	48
2,044,125	8,100,451	1,109 50	279 98	96	40.4	25.2	364,270,636 cigars.	49
66,378	162,373	1,185 20	484 51	1 73	38.2	40.9	.....	50
683,523	4,713,313	2,224 31	322 57	1 02	73.9	14.5	.....	51
511,220	2,049,073	1,072 25	267 51	89	47.2	24.9	.....	52
68,011	192,167	1,325 29	469 04	1 63	29.3	35.4	.....	53
144,002	348,220	811 70	335 67	1 36	7.2	41.4	38,642,186 brick.	54
657,846	1,544,553	833 99	355 21	1 56	11.0	42.6	214,165,868 brick.	55
719,308	1,570,074	814 35	373 08	1 33	24.4	45.8	330,914 tons.	56
270,398	515,919	621 59	325 78	1 44	7.1	52.4	43,595 tons.	57
434,572	726,445	536 52	320 95	1 34	9.1	59.8	223,844 squares.	58
2,991,339	6,692,767	935 92	418 31	1 59	24.3	44.7	.....	59
1,285,138	10,649,292	3,271 67	394 82	1 31	66.8	12.7	1,139,807 dozens.	60
1,250,818	5,279,502	1,502 42	355 95	1 22	58.4	23.7	3,855,618 pairs.	61

## YEAR 1897.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

No.	Character of Industries.	Number of establishments considered.	Capital invested in plants and working capital.	Cost of basic material.	Average number of days in operation.	Number of workmen employed.
62.	Suspenders, .....	2	\$92,000	\$233,500	303	120
63.	Hats and caps, .....	3	307,789	418,877	289	489
64.	Fur and felt hats, .....	4	2,782,743	476,658	308	1,048
65.	Wool hats, .....	7	424,035	343,808	260	447
66.	Umbrellas and parasols, .....	4	404,000	708,157	307	575
67.	Dress trimmings, braids, etc.,	8	1,176,796	685,631	295	1,393
68.	Shirts and shirt waists, .....	9	907,500	974,269	298	1,813
69.	Neckwear, .....	3	135,000	260,833	306	174
70.	Cotton and woolen cloths, ..	24	3,478,546	3,781,507	286	4,754
71.	Carpets, .....	17	3,240,181	2,765,114	292	2,704
72.	Cotton goods, .....	16	2,825,764	1,498,814	279	2,866
73.	Woolen and worsted cassimeres, .....	11	1,339,549	1,449,509	277	1,572
74.	Woolen and worsted fabrics,	16	3,156,227	2,924,303	289	3,307
75.	Woolen and worsted yarn, ..	12	1,719,270	2,111,958	290	1,532
76.	Rugs, yarns, etc., .....	5	4,943,779	1,909,431	270	3,009
77.	Carpet yarns, .....	11	967,575	1,278,068	298	625
78.	Cotton yarns, .....	7	1,239,175	754,701	275	719
79.	Worsted, woolen and cotton yarns, .....	10	2,300,289	1,947,247	289	1,875
80.	Woolen blankets, flannels, etc., .....	5	687,000	638,333	301	719
81.	Lace goods, .....	3	741,300	252,059	296	855
82.	Chenille goods, .....	3	470,000	329,695	300	668
83.	Upholstery goods, .....	10	1,875,721	1,498,449	299	2,059
84.	Knit goods, underwear, .....	13	1,798,000	1,925,733	289	2,570
85.	Hosiery, .....	31	2,154,951	2,117,807	290	5,606
86.	Silk, broad goods, thrown-silk, yarns, etc., .....	6	1,624,700	3,310,003	301	3,479
87.	Silk, broad goods and ribbons, .....	2	1,650,000	1,000,000	301	2,050
88.	Silk—Ribbons, .....	4	394,180	459,658	299	535
Total, .....		801	\$201,889,872	\$102,239,370	286	137,027

## YEAR 1897.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

Aggregate wages paid to workmen.	Market value of production.	Average value of production for each workman employed.	Average yearly earnings.	Average daily wage.	Relative per cent. basic material to value of production.	Relative per cent. wages to value of production.	Total production in tons or given quantity.	No.
\$33,936	\$349,100	\$2,909 17	\$282 80	\$0 93	66.9	9.7	125,000 dozens.	62
179,336	782,060	1,599 30	366 74	1 27	52.9	22.9	163,934 dozens.	63
514,651	1,558,607	1,487 22	491 08	1 59	30.6	33.0	51,025 dozens.	64
143,074	649,061	1,452 04	320 08	1 23	53.0	22.0	195,956 dozens.	65
170,504	1,185,705	2,062 10	296 53	97	59.7	14.4	889,643 pieces.	66
380,240	1,471,696	1,056 49	272 97	93	46.6	25.8	.....	67
494,680	1,953,771	1,074 09	271 95	91	49.9	25.3	190,793 dozens.	68
62,988	353,886	2,033 83	362 00	1 18	56.8	17.8	.....	69
1,643,929	6,407,337	1,217 78	345 80	1 21	59.0	25.6	.....	70
986,918	4,544,385	1,080 61	364 98	1 25	60.8	21.7	13,612,975 yards.	71
896,055	2,998,724	1,046 31	312 65	1 12	50.0	29.9	.....	72
523,351	2,618,868	1,665 95	332 92	1 20	55.3	20.0	.....	73
1,045,039	5,221,713	1,578 99	316 61	1 09	56.0	20.0	.....	74
491,309	3,111,819	2,031 21	320 70	1 11	67.9	15.8	13,427,749 pounds.	75
983,588	4,021,915	1,313 75	320 50	1 19	47.4	24.4	.....	76
233,191	1,749,051	2,798 48	373 10	1 25	73.2	13.3	13,882,000 pounds.	77
201,809	1,117,331	1,595 73	280 68	1 02	65.8	17.6	8,278,160 pounds.	78
562,424	3,233,134	1,724 34	299 96	1 04	60.2	17.4	7,316,935 pounds.	79
264,403	1,221,499	1,698 89	367 74	1 22	52.3	21.6	.....	80
223,436	1,086,945	1,271 28	261 33	88	23.2	20.6	.....	81
169,224	573,450	858 46	253 33	84	57.5	29.5	.....	82
765,506	2,864,002	1,390 97	371 79	1 24	52.3	26.7	.....	83
674,072	3,338,148	1,298 89	262 28	91	57.7	20.2	.....	84
1,377,150	4,518,589	806 03	245 66	85	46.9	30.5	5,366,913 dozens.	85
796,504	4,808,583	1,382 17	228 95	73	68.8	16.6	.....	86
477,694	2,371,966	1,157 06	233 02	77	42.1	20 1	3,304,064 yards.	87
187,491	895,892	1,674 56	350 45	1 17	51.4	20.9	9,934,072 yards.	88
\$52,504,050	\$205,232,150	\$1,497 75	\$383 17	\$1 34	49.3	25.6	.....	

## YEAR 1898.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

No.	Character of Industries.	Number of establishments considered.	Capital invested in plants and working capital.	Cost of basic material.	Average number of days in operation.	Number of workmen employed.
1.	Steel castings, .....	7	\$5,354,846	\$517,448	310	1,363
2.	Steel billets, slabs, blooms, etc., .....	4	12,718,900	8,285,731	286	1,475
3.	Tool steel, etc., .....	3	690,000	89,554	311	214
4.	Iron and steel forgings, .....	7	482,850	157,035	293	318
5.	Iron specialties, .....	2	45,000	45,879	301	35
6.	Malleable iron, .....	4	532,600	698,054	298	1,640
7.	Bolts, nuts, etc., .....	8	1,957,776	713,906	274	1,010
8.	Wire nails, rivets, etc., .....	4	1,012,950	575,701	189	644
9.	Tacks and small nails, .....	4	123,500	35,049	248	63
10.	Wire, .....	5	495,600	127,555	319	122
11.	Wire rope, .....	2	700,000	248,135	363	190
12.	Wire goods, .....	5	155,050	62,195	301	228
13.	Wagon and carriage axles and springs, .....	6	604,475	146,923	289	403
14.	Scales, etc., .....	4	176,000	88,225	298	134
15.	Stoves, ranges, heaters, etc., .....	37	5,592,761	867,876	237	3,627
16.	Bath boilers, tanks, etc., ....	2	54,000	30,676	302	32
17.	Hardware specialties, .....	14	3,337,946	701,155	256	2,871
18.	Edge tools, .....	12	1,646,820	293,289	291	878
19.	Wrenches, picks, etc., .....	5	571,000	143,063	283	272
20.	Locomotives and cars built and repaired, .....	3	1,442,800	4,191,152	296	5,965
21.	Wrought iron pipe and tubes, .....	5	13,505,000	8,285,486	303	5,693
22.	Cast iron pipe, .....	3	641,710	840,511	296	680
23.	Brass, copper and bronze goods, .....	19	1,853,450	1,319,160	297	1,327
24.	Iron and steel bridges, .....	7	961,050	2,126,144	302	1,423
25.	Locomotives, stationary engines, etc., .....	9	12,118,787	5,386,109	305	7,967
26.	Engines, boilers, etc., .....	10	3,930,788	1,514,153	304	1,904
27.	Cars, springs, axles and railway supplies, .....	12	5,872,258	2,757,366	295	3,130
28.	Iron vessels and engines, ....	3	7,262,278	2,997,076	304	5,384
29.	Boilers, tanks, stacks, etc.,...	21	1,656,210	1,172,463	291	1,386

## YEAR 1898.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

Aggregate wages paid to workmen.	Market value of production.	Average value of production for each workman employed.	Average yearly earnings.	Average daily wage.	Relative per cent. basic material to value of production.	Relative per cent. wages to value of production.	Total production in tons or given quantity.	No.
\$619,179	\$2,068,933	\$1,539 94	\$454 28	\$1 46	24.6	29.5	27,786 tons.	1
873,163	10,257,159	6,954 01	591 07	2 07	80.8	8.5	722,475 tons.	2
153,303	445,065	2,079 74	716 37	2 50	20.1	34.4	1,086 tons.	3
175,796	463,025	1,456 05	552 82	1 89	33.9	28.0	6,866 tons.	4
18,700	78,107	2,231 63	534 29	1 77	58.7	23.9	1,061 tons.	5
776,815	2,288,315	1,395 31	473 67	1 59	30.5	33.9	38,228 tons.	6
348,639	1,424,103	1,410 00	345 19	1 26	50.1	24.5	.....	7
185,422	1,083,291	1,661 58	279 25	1 48	53.1	17.1	33,170 tons.	8
24,483	94,162	1,384 73	360 04	1 45	27.2	26.0	1,243 tons.	9
59,750	267,257	2,190 63	489 75	1 54	47.7	22.4	3,731 tons.	10
88,858	655,466	3,449 82	467 67	1 54	37.9	13.6	3,749 tons.	11
63,323	323,568	1,419 16	277 73	92	19.2	19.6	.....	12
210,517	645,805	1,602 49	522 37	1 81	22.7	32.6	.....	13
75,860	263,364	1,965 40	566 12	1 93	33.5	28.8	.....	14
1,753,955	4,227,260	1,165 53	483 58	2 04	20.5	27.3	.....	15
13,611	62,102	1,940 69	425 34	1 41	49.4	21.9	.....	16
1,127,879	2,823,993	983 62	392 28	1 53	24.8	39.9	.....	17
401,694	1,069,190	1,217 76	457 51	1 57	27.4	37.6	.....	18
139,125	494,058	1,816 39	511 49	1 88	29.0	28.1	.....	19
3,411,544	8,000,396	1,341 22	571 93	1 93	52.4	42.6	.....	20
2,451,501	14,552,862	2,556 27	430 62	1 42	56.9	16.9	358,304 tons.	21
263,550	1,260,038	1,828 79	382 51	1 29	64.3	20.1	79,212 tons.	22
575,651	2,416,478	1,821 01	433 80	1 46	54.6	23.8	.....	23
647,664	3,717,213	2,612 24	455 14	1 51	57.2	17.4	73,781 tons.	24
4,559,167	12,862,598	1,614 48	572 26	1 88	41.9	35.5	.....	25
996,882	3,088,737	1,622 24	523 57	1 72	49.0	32.3	.....	26
1,491,520	8,227,597	2,628 62	476 52	1 61	33.5	18.1	.....	27
2,880,847	6,635,431	1,232 34	535 08	1 76	45.2	43.4	.....	28
639,883	2,455,255	1,771 47	461 68	1 59	47.8	26.1	.....	29

## YEAR 1898.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

No.	Character of Industries.	Number of establishments considered.	Capital invested in plants and working capital.	Cost of basic material.	Average number of days in operation.	Number of workmen employed.
30.	Machinery, .....	21	\$9,297,253	\$2,030,334	300	4,434
31.	Foundries and machine shops,	25	3,161,069	1,263,302	296	2,447
32.	Files, etc., .....	2	512,000	82,739	278	369
33.	Saws, .....	3	335,000	28,087	244	47
34.	Plumbers' supplies, .....	3	2,031,622	*	290	965
35.	Electrical supplies, .....	4	13,893,503	2,340,407	301	3,499
36.	Shovels, spades, scoops, etc.,	8	648,100	296,298	246	528
37.	Safes and vault doors, .....	2	68,000	65,984	298	121
38.	Metal and metallic goods, ...	3	390,000	58,176	256	225
39.	Building and structural iron work, .....	2	823,000	1,241,336	307	841
40.	Iron chains, .....	5	264,542	165,742	298	269
41.	Iron fences and railings, ....	7	46,000	81,971	305	126
42.	Agricultural implements, ....	12	1,943,000	1,171,437	300	1,499
43.	Steam pumps, .....	2	380,871	123,813	304	151
44.	Bicycles, .....	3	255,000	455,452	277	352
45.	Pianos and organs, .....	2	117,000	57,843	294	95
46.	Tinware, .....	5	374,000	217,423	300	273
47.	Paper manufactories, .....	8	4,771,595	1,486,541	283	1,483
48.	Wall paper, .....	4	410,500	589,750	284	402
49.	Cigars, .....	46	3,044,190	3,654,579	298	7,800
50.	Book binding, .....	3	130,000	65,522	283	156
51.	Cordage, ropes, twine, etc.,	5	3,260,000	3,524,381	312	2,091
52.	Paper, paper boxes, envelopes, etc., .....	27	1,489,559	1,044,300	302	2,472
53.	Pottery, .....	2	560,000	56,589	291	153
54.	Paving brick, .....	7	549,644	23,113	246	447
55.	Building brick, .....	35	3,714,386	174,974	218	1,905
56.	Fire brick, .....	18	2,556,283	418,484	243	2,327
57.	Slate roofing, etc., tonnage,...	6	1,022,007	32,421	245	762
58.	Slate roofing, etc., squares,...	14	704,913	69,499	177	1,875
59.	Window glass, bottles, and table goods, .....	22	13,607,329	1,587,765	276	7,735
60.	Glazed and chrome kid, ...	7	4,163,993	8,092,540	298	3,745
61.	Men's, women's, misses and children's shoes, .....	15	2,350,481	3,187,125	288	3,688

\*Incomplete returns of value of basic material.



## YEAR 1898.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

Aggregate wages paid to workmen.	Market value of production.	Average value of production for each workman employed.	Average yearly earnings.	Average daily wage.	Relative per cent. basic material to value of production.	Relative per cent. wages to value of production.	Total production in tons or given quantity.	No.
\$2,402,335	\$6,500,975	\$1,466 16	\$541 79	\$1 81	31.2	37.0	.....	30
1,184,333	3,571,600	1,459 58	483 99	1 63	35.4	33.2	.....	31
117,553	400,465	1,085 27	318 57	1 15	20.7	29.4	.....	32
22,939	76,338	1,624 21	488 06	2 00	36.8	30.0	.....	33
432,969	1,097,058	1,136 85	448 67	1 55	....	39.5	.....	34
1,929,920	6,821,374	1,949 52	551 56	1 83	34.3	28.3	.....	35
236,593	997,314	1,888 85	448 09	1 82	29.7	23.7	.....	36
61,012	153,085	1,265 17	504 23	1 09	43.1	39.9	.....	37
74,084	207 496	922 20	329 26	1 29	28.0	35.7	.....	38
441,539	2,057,639	2,446 66	525 02	1 71	60.3	21.4	.....	39
120,291	409,304	1,521 58	447 18	1 50	40.5	29.4	6,307 tons.	40
57,197	187,059	1,484 60	453 94	1 49	43.8	30.6	.....	41
696,721	2,840,608	1,895 00	464 79	1 55	41.2	24.5	.....	42
112,032	313,511	2,076 23	741 93	2 44	39.5	35.7	.....	43
154,962	683,862	1,942 79	440 23	1 63	66.6	22.7	.....	44
45,882	136,971	1,441 80	482 97	1 64	42.2	33.5	.....	45
103,119	469,200	1,687 77	370 93	1 24	46.2	22.0	.....	46
591,810	3,315,552	2,235 71	399 06	1 41	44.8	17.8	55,014 tons.	47
139,400	1,154,386	2,871 61	346 77	1 22	51.1	12.1	28,867,977 rolls.	48
2,235,665	8,866,424	1,136 72	286 62	98	41.2	25.2	362,674,423 cigars.	49
75,293	180,567	1,157 48	482 65	1 70	36.3	41.7	.....	50
674,993	4,947,813	2,366 24	322 81	1 03	71.2	13.6	.....	51
567,743	2,282,183	923 21	229 67	76	45.8	24.9	.....	52
73,799	226,326	1,479 25	482 34	1 66	25.0	32.6	.....	53
148,144	367,395	821 91	331 42	1 35	6.3	40.3	40,451,959 bricks.	54
653,415	1,492,161	783 29	343 00	1 57	11.7	43.8	238,084,927 bricks.	55
843,336	1,915,392	823 12	362 41	1 49	21.8	44.0	408,796 tons.	56
250,225	537,702	705 64	328 38	1 34	6.0	46.5	37,109 tons.	57
472,437	756,977	403 72	251 97	1 42	9.2	62.4	273,928 squares.	58
3,412,343	7,713,185	997 18	441 16	1 60	20.6	44.2	.....	59
1,472,762	12,691,322	3,338 87	393 26	1 32	63.8	11.6	1,332,785 dozens.	60
1,325,230	5,620,155	1,523 90	359 34	1 25	56.7	23.6	3,739,548 pairs.	61

## YEAR 1898.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

No.	Character of Industries.	Number of establishments considered.	Capital invested in plants and working capital.	Cost of basic material.	Average number of days in operation.	Number of workmen employed.
62.	Suspenders, .....	2	\$95,000	\$245,000	297	127
63.	Hats and caps, .....	3	296,776	377,205	286	560
64.	Fur and felt hats, .....	4	2,775,406	494,817	307	1,257
65.	Wool hats, .....	7	458,635	314,029	279	480
66.	Umbrellas and parasols, ....	4	327,000	754,090	308	505
67.	Dress trimmings, braids, etc.,	8	1,229,296	876,508	298	1,543
68.	Shirts and shirt waists, ....	9	933,200	1,143,081	298	1,993
69.	Neckwear, .....	3	135,000	214,342	308	183
70.	Cotton and woolen cloths, ...	24	3,477,346	3,745,019	266	4,705
71.	Carpets, .....	17	3,339,213	2,850,838	292	2,753
72.	Cotton goods, .....	16	2,893,271	1,478,396	290	3,007
73.	Woolen and worsted cassi- meres, .....	11	1,301,000	1,581,776	262	1,700
74.	Woolen and worsted fabrics,	16	3,305,892	3,030,628	288	3,075
75.	Woolen and worsted yarn, ..	12	2,616,000	1,994,012	289	1,445
76.	Rugs, yarns, etc., .....	5	5,056,824	1,741,967	277	2,926
77.	Carpet yarns, .....	11	968,000	946,871	266	577
78.	Cotton yarns, .....	7	1,245,037	759,380	294	795
79.	Worsted, woolen and cotton yarns, .....	10	2,314,603	1,724,655	246	1,915
80.	Woolen blankets, flannels, etc., .....	5	696,500	1,133,808	351	1,063
81.	Lace goods, .....	3	795,000	290,322	307	974
82.	Chenille goods, .....	3	470,000	356,595	300	599
83.	Upholstery goods, .....	10	1,856,148	1,626,165	301	2,127
84.	Knit goods, underwear, ....	13	1,833,600	2,058,746	280	2,568
85.	Hosiery, .....	31	2,347,041	2,312,556	286	5,917
86.	Silk, broad goods, thrown- silk, yarns, etc., .....	6	1,977,500	3,764,644	293	3,789
87.	Silk, broad goods and rib- bons, .....	2	1,660,000	1,290,000	302	2,200
88.	Silk—Ribbons, .....	4	445,313	514,851	299	634
Total, .....		801	\$207,219,841	\$115,605,108	286	153,096

## YEAR 1898.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

Aggregate wages paid to workmen.	Market value of production.	Average value of production for each workman employed.	Average yearly earnings.	Average daily wage.	Relative per cent. basic material to value of production.	Relative per cent. wages to value of production.	Total production in tons or given quantity.	No.
\$41,000	\$391,500	\$3,082 68	\$322 83	\$1 09	62.6	10.5	165,000 dozens.	62
176,383	737,149	1,316 34	314 97	1 10	51.2	23.9	100,663 dozens.	63
595,085	1,731,063	1,377 16	473 42	1 54	28.6	34.4	55,925 dozens.	64
140,773	636,904	1,326 88	293 28	1 05	49.3	22.1	201,718 dozens.	65
135,627	1,156,372	2,289 55	268 57	87	65.2	11.7	889,252 pieces.	66
413,277	1,708,275	1,107 11	267 84	90	51.3	24.2	.....	67
539,135	2,186,983	1,097 33	270 51	91	52.3	24.7	337,213 dozens.	68
68,975	375,689	2,052 95	376 91	1 22	57.1	18.4	.....	69
1,646,482	6,466,073	1,374 30	349 94	1 32	57.9	25.5	.....	70
998,647	4,823,328	1,752 03	362 75	1 24	59.1	20.7	12,904,687 yards.	71
965,037	3,104,170	1,032 31	320 93	1 11	47.6	31.1	.....	72
565,281	2,799,134	1,646 55	332 52	1 27	56.5	20.2	.....	73
1,066,441	5,320,285	1,730 17	346 81	1 20	57.0	20.0	.....	74
453,110	3,819,936	2,643 55	313 57	1 09	52.2	11.8	9,307,876 pounds.	75
996,501	3,931,652	1,343 70	340 57	1 23	44.3	25.8	.....	76
192,218	1,302,256	2,412 92	333 13	1 25	68.0	13.8	11,499,606 pounds.	77
239,109	1,245,952	1,567 23	300 77	1 02	60.9	19.2	9,070,922 pounds.	78
541,000	2,890,304	1,509 30	282 51	1 15	59.7	18.7	6,546,001 pounds.	79
350,302	2,107,398	1,982 50	329 54	94	53.8	16.6	.....	80
269,910	1,219,698	1,252 26	277 11	90	23.8	22.1	.....	81
171,041	591,280	987 11	285 54	95	60.3	28.9	.....	82
847,374	3,100,667	1,457 70	398 38	1 32	52.4	27.3	.....	83
686,552	3,493,036	1,360 22	267 35	95	58.9	19.6	.....	84
1,483,567	4,880,155	824 77	250 73	88	47.4	30.4	7,181,631 dozens.	85
907,085	5,555,201	1,466 14	239 40	82	67.8	16.3	.....	86
516,061	2,898,933	1,317 70	234 57	78	41.4	17.8	3,712,623 yards.	87
213,252	1,067,823	1,684 26	336 36	1 12	48.2	20.0	13,346,776 yards.	88
\$60,377,592	\$240,813,543	\$1,572 96	\$394 38	\$1 38	48.1	25.1	.....	

## YEAR 1899.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

No.	Character of Industries.	Number of establishments considered.	Capital invested in plants and working capital.	Cost of basic material.	Average number of days in operation.	Number of workmen employed.
1.	Steel castings, .....	7	\$5,393,523	\$822,724	302	1,705
2.	Steel billets, slabs, blooms, etc., .....	4	13,318,900	14,459,812	295	1,802
3.	Tool steel, etc., .....	3	690,000	96,154	291	209
4.	Iron and steel forgings, .....	7	491,800	252,496	300	395
5.	Iron specialties, .....	2	45,000	48,083	301	31
6.	Malleable iron, .....	4	1,527,533	839,640	298	1,831
7.	Bolts, nuts, etc., .....	8	2,132,934	1,456,313	284	1,268
8.	Wire nails, rivets, etc., .....	4	1,045,000	738,589	142	725
9.	Tacks and small nails, .....	4	163,500	68,184	280	158
10.	Wire, .....	5	605,900	135,429	323	157
11.	Wire rope, .....	2	700,000	361,009	304	232
12.	Wire goods, .....	5	170,550	88,686	301	257
13.	Wagon and carriage axles and springs, .....	6	614,000	282,368	285	494
14.	Scales, etc., .....	4	206,000	111,309	302	159
15.	Stoves, ranges, heaters, etc., .....	37	5,528,895	1,080,427	254	3,682
16.	Bath boilers, tanks, etc., ....	2	59,000	44,809	304	45
17.	Hardware specialties, .....	14	3,559,734	1,053,817	280	3,307
18.	Edge tools, .....	12	1,233,793	399,445	294	1,018
19.	Wrenches, picks, etc., .....	5	571,000	228,910	293	341
20.	Locomotives and cars built and repaired, .....	3	1,461,400	5,634,355	304	6,655
21.	Wrought iron pipe and tubes, .....	5	14,101,131	15,485,996	269	8,754
22.	Cast iron pipes, .....	3	896,776	912,507	252	740
23.	Brass, copper and bronze goods, .....	19	1,877,750	2,137,539	303	1,507
24.	Iron and steel bridges, .....	7	1,001,050	3,193,878	280	1,680
25.	Locomotives, stationary engines, etc., .....	9	12,950,218	8,606,253	307	9,827
26.	Engines, boilers, etc., .....	10	4,036,999	2,331,697	301	2,163
27.	Cars, springs, axles and railway supplies, .....	12	27,585,264	10,447,921	309	6,343
28.	Iron vessels and engines, ....	3	7,866,622	5,117,337	296	6,188
29.	Boilers, tanks, stacks, etc.,...	21	1,857,238	1,848,563	304	1,627

## YEAR 1899.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

Aggregate wages paid to workmen.	Market value of production.	Average value of production for each workman employed.	Average yearly earnings.	Average daily wage.	Relative per cent. basic material to value of production.	Relative per cent. wages to value of production.	Total production in tons or given quantity.	No.
\$838,679	\$2,857,935	\$1,676 21	\$491 89	\$1 63	28.7	29.5	34,845 tons.	1
1,239,839	18,832,437	10,450 85	688 03	2 33	76.8	6.6	842,183 tons.	2
140,945	479,480	2,294 16	674 38	2 32	20.1	29.4	1,295 tons.	3
249,106	784,254	1,985 45	630 65	2 10	32.2	31.8	9,813 tons.	4
18,350	80,420	2,594 20	591 94	1 97	59.8	22.8	913 tons.	5
928,417	2,807,229	1,533 17	507 05	1 70	29.9	33.1	44,852 tons.	6
477,994	2,465,793	1,944 63	376 97	1 33	59.1	19.3	.....	7
244,745	1,803,903	2,488 14	337 58	2 38	40.9	13.6	37,245 tons.	8
54,460	192,644	1,219 27	344 68	1 23	35.4	28.3	2,287 tons.	9
77,437	310,572	1,914 47	493 23	1 53	43.6	24.9	4,024 tons.	10
113,217	971,118	4,185 85	488 00	1 61	37.2	11.7	4,880 tons.	11
82,879	396,067	1,541 11	322 50	1 07	22.4	20.9	.....	12
257,772	914,713	1,851 65	521 80	1 83	30.9	28.2	.....	13
96,360	346,487	2,179 18	604 78	2 00	32.1	27.8	.....	14
1,970,880	5,044,253	1,369 98	535 27	2 11	21.4	39.1	.....	15
19,448	89,691	1,993 13	432 18	1 42	50.0	21.7	.....	16
1,428,934	3,839,960	1,161 16	432 09	1 54	27.0	37.2	.....	17
474,562	1,393,284	1,368 65	466 17	1 59	28.7	34.1	.....	18
179,408	685,497	2,010 26	526 12	1 80	33.4	26.2	.....	19
4,049,295	10,020,362	1,505 69	608 46	2 00	56.2	40.4	.....	20
4,566,297	26,160,998	2,988 46	521 62	1 94	59.2	17.5	452,513 tons.	21
260,355	1,350,801	1,825 41	351 83	1 40	67.6	19.3	61,344 tons,	22
661,456	3,549,845	2,355 57	438 92	1 45	60.2	18.6	.....	23
722,759	5,095,097	3,032 80	430 21	1 54	62.7	14.2	81,970 tons.	24
5,764,855	17,572,598	1,788 20	586 63	1 91	49.0	32.8	.....	25
1,185,494	4,574,136	2,114 72	548 08	1 82	51.0	25.9	.....	26
3,359,489	18,549,857	2,924 26	529 63	1 71	56.3	18.1	.....	27
3,428,153	9,165,761	1,481 22	554 00	1 87	55.8	37.4	.....	28
780,279	3,454,771	2,123 40	479 58	1 58	53.5	22.6	.....	29

YEAR 1899.

RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

No.	Character of Industries.	Number of establishments considered.	Capital invested in plants and working capital.	Cost of basic material.	Average number of days in operation.	Number of workmen employed.
30.	Machinery, .....	21	\$9,650,673	\$3,239,736	302	5,600
31.	Foundries and machine shops,	25	3,621,293	1,925,085	304	3,104
32.	Files, etc., .....	2	512,000	105,104	302	334
33.	Saws, .....	3	335,000	31,600	250	47
34.	Plumbers' supplies, .....	3	2,080,669	552,190	312	1,046
35.	Electrical supplies, .....	4	14,018,383	3,573,084	302	5,184
36.	Shovels, spades, scoops, etc.,	8	648,100	465,999	281	563
37.	Safes and vault doors, .....	2	68,000	65,539	294	120
38.	Metal and metallic goods, ...	3	390,000	82,334	265	260
39.	Building and structural iron work, .....	2	823,000	1,227,578	305	1,240
40.	Iron chains, .....	5	264,542	252,412	296	299
41.	Iron fences and railings, ....	7	49,300	133,235	303	155
42.	Agricultural implements, ....	12	1,703,000	1,381,353	298	1,595
43.	Steam pumps, .....	2	433,343	176,738	301	225
44.	Bicycles, .....	3	255,000	308,541	275	297
45.	Pianos and organs, .....	2	141,000	59,162	293	105
46.	Tinware, .....	5	414,000	272,376	301	275
47.	Paper manufactories, .....	8	5,082,399	1,739,547	284	1,681
48.	Wall paper, .....	4	410,000	627,300	282	401
49.	Cigars, .....	46	3,347,204	3,797,460	295	8,303
50.	Book binding, .....	3	131,800	77,379	280	176
51.	Cordage, ropes, twine, etc.,	5	3,435,000	4,509,784	312	2,191
52.	Paper, paper boxes, envelopes, etc., .....	27	1,873,115	1,129,745	303	2,302
53.	Pottery, .....	2	510,000	54,604	298	162
54.	Paving brick, .....	7	614,478	33,506	230	528
55.	Building brick, .....	35	3,838,184	181,106	220	1,894
56.	Fire brick, .....	18	2,746,876	552,972	249	2,917
57.	Slate roofing, etc., tonnage,...	6	831,112	31,861	236	664
58.	Slate roofing, etc., squares,...	14	534,914	80,325	245	1,552
59.	Window glass, bottles, and table goods, .....	22	13,677,194	1,990,388	283	8,690
60.	Glazed and chrome kid, ...	7	4,609,490	11,007,875	300	4,593
61.	Men's, women's, misses and children's shoes, .....	15	2,446,021	3,293,639	292	3,463



## YEAR 1899.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

Aggregate wages paid to workmen.	Market value of production.	Average value of production for each workman employed.	Average yearly earnings.	Average daily wage.	Relative per cent. basic material to value of production.	Relative per cent. wages to value of production.	Total production in tons or given quantity.	No.
\$3,122,970	\$8,720,374	\$1,550 68	\$554 70	\$1 84	37.1	35.8	.....	30
1,570,135	5,201,285	1,675 67	505 84	1 66	37.0	30.2	.....	31
136,071	456,967	1,159 81	345 36	1 14	23.0	29.8	.....	32
24,100	83,624	1,779 23	512 77	2 05	37.8	28.8	.....	33
502,827	1,436,661	1,373 48	480 71	1 54	38.4	35.0	.....	34
2,856,814	11,462,408	2,211 11	551 08	1 82	31.2	24.9	.....	35
291,969	1,493,946	2,653 55	518 60	1 85	31.2	19.5	.....	36
59,965	156,773	1,306 44	499 71	1 70	41.8	38.2	.....	37
106,846	300,978	1,118 88	397 20	1 50	27.4	38.5	.....	38
657,942	2,157,573	1,739 98	530 60	1 74	56.9	30.5	.....	39
140,403	584,109	1,953 54	469 58	1 59	43.2	24.0	6,745 tons.	40
69,864	260,498	1,680 63	450 74	1 49	51.1	26.8	.....	41
762,800	3,185,835	1,997 39	478 24	1 61	43.4	24.3	.....	42
166,746	411,714	1,829 84	741 08	2 46	42.9	40.5	.....	43
127,384	523,870	1,763 87	428 90	1 61	58.9	24.3	.....	44
48,127	178,679	1,701 70	458 35	1 56	33.1	27.0	.....	45
118,410	545,475	1,983 55	430 58	1 43	49.9	21.7	.....	46
688,257	4,254,182	2,530 74	409 03	1 44	40.9	16.2	67,929 tons.	47
143,741	1,255,130	3,130 15	358 45	1 27	50.0	11.4	27,458,252 rolls.	48
2,424,293	9,676,533	1,164 72	291 80	99	39.2	25.1	396,987,894 cigars.	49
86,318	208,527	1,184 81	490 44	1 75	37.1	41.4	.....	50
792,522	6,219,058	2,838 46	361 71	1 16	72.5	12.7	.....	51
1,678,205	2,473,800	1,074 63	294 62	97	45.7	27.4	.....	52
78,658	244,254	1,507 74	485 54	1 63	22.4	32.2	.....	53
176,133	416,263	788 38	334 91	1 45	8.0	42.5	44,546,987 bricks.	54
692,770	1,676,130	884 97	365 77	1 66	10.8	41.3	238,429,295 bricks.	55
1,133,377	2,486,398	843 70	384 59	1 55	22.2	45.6	538,059 tons.	56
219,276	467,112	703 48	330 23	1 40	6.8	46.9	35,560 tons.	57
544,953	930,606	599 62	351 13	1 43	8.6	58.5	287,826 squares.	58
4,043,313	9,295,604	1,068 58	464 80	1 64	21.4	43.5	.....	59
1,907,913	16,342,644	3,554 29	414 94	1 38	67.4	11.7	1,688,109 dozens.	60
1,335,825	5,791,046	1,660 28	382 98	1 29	56.9	23.0	4,137,680 pairs.	61

## YEAR 1899.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

No.	Character of Industries.	Number of establishments considered.	Capital invested in plants and working capital.	Cost of basic material.	Average number of days in operation.	Number of workmen employed.
62.	Suspenders, .....	2	\$120,000	\$315,000	299	162
63.	Hats and caps, .....	3	307,676	433,669	283	560
64.	Fur and felt hats, .....	4	2,775,439	593,645	309	1,412
65.	Wool hats, .....	7	414,493	333,533	260	537
66.	Umbrellas and parasols, .....	4	353,000	694,246	308	531
67.	Dress trimmings, braids, etc., .....	8	3,119,688	912,697	301	1,760
68.	Shirts and shirt waists, .....	9	979,900	1,342,360	298	2,294
69.	Neckwear, .....	3	135,000	261,882	308	195
70.	Cotton and woolen cloths, ..	24	3,550,167	4,768,367	273	5,193
71.	Carpets, .....	17	3,653,864	3,494,859	302	2,834
72.	Cotton goods, .....	16	3,309,205	1,708,151	296	3,294
73.	Woolen and worsted cassi- meres, .....	11	1,382,000	2,058,438	281	1,928
74.	Woolen and worsted fabrics, .....	16	3,489,180	3,542,014	296	3,414
75.	Woolen and worsted yarn, ..	12	2,686,000	2,636,300	291	1,478
76.	Rugs, yarns, etc., .....	5	5,393,446	1,937,653	285	3,074
77.	Carpet yarns, .....	11	1,062,532	1,351,831	299	633
78.	Cotton yarns, .....	7	1,296,148	798,654	290	800
79.	Worsted, woolen and cotton yarns, .....	10	2,642,458	2,447,491	217	1,904
80.	Woolen blankets, flannels, etc., .....	5	794,122	815,512	279	967
81.	Lace goods, .....	3	860,850	350,185	305	1,098
82.	Chenille goods, .....	3	465,000	365,058	300	601
83.	Upholstery goods, .....	10	1,985,679	1,730,220	290	2,278
84.	Knit goods, underwear, .....	13	1,987,729	2,215,033	279	2,864
85.	Hosiery, .....	31	2,894,145	2,306,461	281	6,146
86.	Silk, broad goods, thrown- silk, yarns, etc., .....	6	2,102,500	4,699,556	278	3,601
87.	Silk, broad goods and rib- bons, .....	2	1,670,000	1,315,000	301	2,000
88.	Silk—Ribbons, .....	4	463,316	517,973	293	644
Total, .....		801	\$239,377,197	\$165,089,595	288	175,641

## YEAR 1899.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

Aggregate wages paid to workmen.	Market value of production.	Average value of production for each workman employed.	Average yearly earnings.	Average daily wage.	Relative per cent. basic material to value of production.	Relative per cent. wages to value of production.	Total production in tons or given quantity.	No.
\$61,150	\$483,560	\$2,983 02	\$377 47	\$1 26	65.2	12.7	180,500 dozens.	62
191,909	698,891	1,218 02	342 69	1 21	62.0	27.5	96,229 dozens.	63
665,296	2,020,731	1,431 11	471 17	1 52	29.4	32.9	64,127 dozens.	64
163,164	746,186	1,389 55	303 84	1 11	44.7	21.9	208,122 dozens.	65
144,650	1,231,088	2,318 43	272 41	89	56.4	11.7	942,826 pieces.	66
479,688	2,085,395	1,184 88	272 55	91	43.8	23.0	.....	67
687,095	2,660,418	1,162 78	299 52	1 01	50.3	25.8	393,622 dozens.	68
73,883	437,720	2,244 72	378 89	1 23	59.8	16.9	.....	69
1,934,224	8,264,359	1,591 44	372 47	1 36	57.7	23.1	.....	70
1,177,796	5,940,777	2,096 25	415 59	1 37	58.8	19.8	15,648,813 yards.	71
1,103,648	3,533,249	1,072 61	335 05	1 13	48.3	31.2	.....	72
673,336	3,548,303	1,840 41	349 24	1 24	58.0	19.0	.....	73
1,217,967	6,082,189	1,781 54	356 76	1 21	58.2	20.0	.....	74
534,400	5,256,352	3,556 40	361 57	1 24	50.2	10.2	9,705,579 pounds.	75
1,172,575	4,504,288	1,465 29	381 45	1 34	43.0	26.0	.....	76
242,414	1,758,794	2,778 50	382 96	1 28	71.2	13.8	15,271,761 pounds.	77
244,291	1,333,579	1,666 97	305 36	1 05	59.9	18.3	9,278,304 pounds.	78
655,368	4,127,434	2,167 77	344 21	1 24	59.3	15.9	7,375,619 pounds.	79
322,275	1,633,499	1,689 24	333 27	1 19	49.9	19.7	.....	80
313,641	1,307,879	1,191 15	285 65	94	26.8	24.0	.....	81
203,598	664,622	1,105 86	338 77	1 13	54.9	30.6	.....	82
921,752	1,514,614	1,542 82	404 63	1 40	49.2	26.2	.....	83
790,868	3,851,935	1,344 95	276 14	99	57.5	20.5	.....	84
1,610,552	5,239,702	852 54	262 05	93	44.0	30.7	5,934,516 dozens.	85
963,224	6,944,577	1,978 51	267 49	96	67.7	13.9	.....	86
522,612	3,112,400	1,556 20	261 31	87	42.3	16.8	5,668,697 yards.	87
217,812	1,038,299	1,612 27	338 22	1 15	49.9	21.0	15,984,362 yards.	88
\$76,669,979	\$324,725,616	\$1,848 80	\$436 52	\$1 52	50.8	23.6	.....	

## YEAR 1900.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

No.	Character of Industries.	Number of establishments considered.	Capital invested in plants and working capital.	Cost of basic material.	Average number of days in operation.	Number of workmen employed.
1.	Steel castings, .....	7	\$5,394,263	\$618,748	307	1,741
2.	Steel billets, slabs, blooms, etc., .....	4	13,791,119	13,200,979	246	1,682
3.	Tool steel, etc., .....	3	1,050,000	78,514	292	132
4.	Iron and steel forgings, .....	7	496,100	241,555	292	384
5.	Iron specialties, .....	2	45,500	51,684	301	42
6.	Malleable iron, .....	4	1,524,280	975,533	291	1,671
7.	Bolts, nuts, etc., .....	8	2,359,574	1,428,181	291	1,324
8.	Wire nails, rivets, etc., .....	4	1,025,000	765,914	116	812
9.	Nails and small nails, .....	4	163,500	64,075	253	111
10.	Wire, .....	5	611,900	216,356	301	254
11.	Wire rope, .....	2	1,100,000	1,035,106	306	342
12.	Wire goods, .....	5	167,916	85,360	301	208
13.	Wagon and carriage axles and springs, .....	6	606,454	238,419	278	473
14.	Scales, etc., .....	4	216,000	122,333	298	177
15.	Stoves, ranges, heaters, etc., .....	37	7,860,316	1,409,891	245	3,758
16.	Bath boilers, tanks, etc., ....	2	59,000	44,391	308	38
17.	Hardware specialties, .....	14	4,045,685	849,471	249	3,154
18.	Edge tools, .....	12	1,689,815	486,985	297	1,077
19.	Wrenches, picks, etc., .....	5	575,000	256,264	280	386
20.	Locomotives and cars built and repaired, .....	3	1,461,400	6,459,641	303	7,185
21.	Wrought iron pipe and tubes, .....	5	14,101,131	12,906,404	266	5,420
22.	Cast iron pipe, .....	3	896,776	1,123,503	306	797
23.	Brass, copper and bronze goods, .....	19	2,010,167	1,597,301	299	1,582
24.	Iron and steel bridges, .....	7	1,901,050	5,544,896	301	2,233
25.	Locomotives, stationary engines, etc., .....	9	13,417,380	11,568,788	307	12,003
26.	Engines, boilers, etc., .....	10	4,114,000	2,480,161	306	2,372
27.	Cars, springs, axles and railway supplies, .....	12	27,971,682	18,766,916	311	9,125
28.	Iron vessels and engines, ....	3	10,973,657	6,705,326	292	6,677
29.	Boilers, tanks, stacks, etc....	21	2,022,964	2,148,536	305	1,933

## YEAR 1900.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

Aggregate wages paid to workmen.	Market value of production.	Average value of production for each workman employed.	Average yearly earnings.	Average daily wage.	Relative per cent. basic material to value of production.	Relative per cent. wages to value of production.	Total production in tons or given quantity.	No.
\$821,510	\$3,172,100	\$1,822 60	\$471 86	\$1 54	19.5	25.9	33,231 tons.	1
1,087,913	14,649,357	8,709 49	646 80	2 62	90.1	7.4	675,994 tons.	2
98,601	426,340	3,365 61	746 98	2 56	18.0	22.6	1,667 tons.	3
263,271	745,873	1,942 38	685 60	2 35	59.2	35.3	9,159 tons.	4
20,350	89,724	2,136 29	484 52	1 61	57.6	22.7	1,017 tons.	5
866,482	2,485,414	1,487 38	518 54	1 78	39.3	34.9	77,426 tons.	6
508,683	2,843,678	2,147 79	384 20	1 32	50.2	17.9	41,218 tons.	7
165,895	1,347,191	1,659 10	294 30	1 76	56.8	12 3	22,514 tons.	8
44,982	171,291	1,214 83	319 02	1 26	37.4	26.3	1,975 tons.	9
104,066	452,592	1,781 85	469 71	1 36	47.8	23.0	3,444 tons.	10
164,517	1,471,284	4,302 00	481 04	1 57	70.4	11.2	6,443 tons.	11
64,328	342,677	1,647 49	369 27	1 03	24.9	18.8	.....	12
237,358	737,639	1,559 49	501 81	1 80	32.3	32.2	.....	13
165,851	375,036	2,118 85	598 03	2 01	32.6	28.2	.....	14
2,126,605	5,360,816	1,426 51	565 89	2 31	26.3	39.7	.....	15
16,804	82,639	2,174 71	442 21	1 44	53.7	20.3	.....	16
1,226,396	3,341,572	1,059 47	388 84	1 56	25.4	36.7	.....	17
507,597	1,618,418	1,502 71	471 30	1 59	30.1	31.4	.....	18
184,711	690,584	1,789 08	478 53	1 71	37.1	26.7	.....	19
4,366,592	11,203,744	1,559 32	607 74	2 01	57.7	39.0	.....	20
2,575,403	21,342,983	3,937 82	475 17	1 79	60.5	12.1	295,574 tons.	21
357,650	1,745,213	2,189 73	448 75	1 47	64.4	20.5	74,456 tons.	22
742,750	3,487,255	2,204 30	469 50	1 57	45.8	21.3	.....	23
1,235,666	8,649,413	3,873 45	553 36	1 84	64.1	14.3	124,231 tons.	24
7,274,385	24,600,085	2,049 49	606 05	1 97	47.0	29.6	.....	25
1,309,636	5,088,689	2,144 41	551 89	1 80	48.7	25.7	.....	26
4,865,877	3,021,417	3,310 84	533 25	1 71	62.1	16.1	.....	27
3,538,223	12,062,974	1,866 65	529 91	1 81	55.6	29.3	.....	28
893,362	4,085,048	2,113 32	462 16	1 52	52.5	21.9	.....	29

## YEAR 1900.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

No.	Character of Industries.	Number of establishments considered.	Capital invested in plants and working capital.	Cost of basic material.	Average number of days in operation.	Number of workmen employed.
30.	Machinery, .....	21	\$10,418,419	\$3,607,094	302	6,100
31.	Foundries and machine shops,	25	3,939,754	2,036,612	300	3,204
32.	Files, etc., .....	2	512,000	113,639	291	422
33.	Saws, .....	3	334,000	48,071	281	56
34.	Plumbers' supplies, .....	3	2,260,387	425,043	312	1,048
35.	Electrical supplies, .....	4	15,032,833	5,375,117	296	6,210
36.	Shovels, spades, scoops, etc.,	8	741,100	406,234	253	532
37.	Safes and vault doors, .....	2	173,397	121,397	290	180
38.	Metal and metallic goods, ...	3	390,000	93,877	275	297
39.	Building and structural iron work, .....	2	823,000	3,053,789	306	1,678
40.	Iron chains, .....	5	334,798	239,225	252	264
41.	Iron fences and railings, ....	7	56,500	157,497	305	197
42.	Agricultural implements, ....	12	2,035,000	1,483,154	299	1,587
43.	Steam pumps, .....	2	479,015	200,479	301	268
44.	Bicycles, .....	3	255,000	244,612	236	256
45.	Pianos and organs, .....	2	246,000	79,526	292	146
46.	Tinware, .....	5	434,000	290,940	300	328
47.	Paper manufactories, .....	8	5,666,232	1,748,551	297	1,740
48.	Wall paper, .....	4	800,000	595,111	280	349
49.	Cigars, .....	46	3,069,420	4,032,899	296	8,668
50.	Book binding, .....	3	136,250	83,716	288	188
51.	Cordage, ropes, twine, etc.,	5	3,410,000	5,340,848	300	2,256
52.	Paper, paper boxes, envelopes, etc., .....	27	1,933,681	1,235,711	300	2,242
53.	Pottery, .....	2	505,000	64,561	288	172
54.	Paving brick, .....	7	642,074	72,534	270	587
55.	Building brick, .....	35	3,845,898	165,202	217	1,865
56.	Fire brick, .....	18	2,935,232	790,260	300	3,823
57.	Slate roofing, etc., tonnage,...	6	974,100	28,146	255	764
58.	Slate roofing, etc., squares...	14	630,914	69,280	244	1,560
59.	Window glass, bottles, and table goods, .....	22	14,972,077	2,050,111	265	9,943
60.	Glazed and chrome kid, ...	7	4,861,913	9,330,221	270	4,439
61.	Men's, women's, misses and children's shoes, .....	15	2,440,783	3,179,012	295	3,467



## YEAR 1900.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

Aggregate wages paid to workmen.	Market value of production.	Average value of production for each workman employed.	Average yearly earnings.	Average daily wage.	Relative per cent. basic material to value of production.	Relative per cent. wages to value of production.	Total production in tons or given quantity.	No.
\$3,292,239	\$10,067,941	\$1,650 48	\$539 71	\$1 79	35.8	32.7	.....	30
1,748,800	5,867,126	1,831 19	545 82	1 82	34.7	29.8	.....	31
140,544	477,377	1,131 23	333 04	1 14	23.8	29.4	.....	32
32,108	132,105	2,359 02	573 36	2 04	36.4	24.4	.....	33
504,686	1,301,473	1,241 87	481 57	1 54	32.6	38.8	.....	34
3,517,368	15,447,949	2,487 59	566 40	1 91	34.8	22.8	.....	35
230,909	1,134,772	2,133 03	434 04	1 72	35.8	20.3	.....	36
79,594	257,778	1,432 10	442 19	1 52	47.1	30.9	.....	37
116,057	334,973	1,127 85	390 76	1 42	28.0	34.6	.....	38
879,148	4,572,828	2,725 17	523 93	1 71	66.8	19.2	.....	39
124,543	508 450	1,925 95	471 75	1 87	47.0	24.5	6,597 tons.	40
88,304	306,812	1,557 42	448 24	1 47	51.3	28.8	.....	41
760,373	3,176,317	2,001 46	479 13	1 60	46.7	23.9	.....	42
193,157	645,011	2,406 76	720 73	2 39	31.1	29.9	.....	43
97,992	377,368	1,474 09	352 78	1 62	64.8	26.0	.....	44
63,243	205,621	1,408 36	433 17	1 48	38.6	30.7	.....	45
134,105	554,813	1,691 32	411 90	1 37	52.4	24.2	.....	46
768,824	4,671,243	2,684 62	441 85	1 49	37.4	16.4	71,184 tons.	47
158,741	1,120,084	3,209 41	424 44	1 51	53.1	14.2	26,114,145 rolls.	48
2,653,246	10,362,696	1,195 51	306 10	1 04	38.9	25.6	420,548,723 cigars.	49
98,563	217,460	1,156 70	524 27	1 82	38.5	45.3	.....	50
742,246	6,922,914	3,068 67	329 01	1 09	77.1	10.7	.....	51
604,789	2,523,904	1,125 74	269 75	90	49.0	24.0	.....	52
78,307	232,121	1,349 54	455 27	1 56	27.8	33.7	.....	53
237,666	604,307	1,029 48	404 88	1 50	12.0	39.3	51,882,647 bricks.	54
681,720	1,609,052	862 76	365 53	1 69	10.3	42.4	223,155,408 bricks.	55
1,602,426	3,560,462	931 33	419 15	1 40	22.2	45.0	666,863 tons.	56
280,065	520,415	681 17	366 58	1 44	5.4	53.8	59,951 tons.	57
565,623	888,733	569 70	362 58	1 48	7.8	63.6	265,796 squares.	58
4,570,920	10,120,232	1,017 82	459 71	1 73	20.3	45.2	.....	59
1,759,101	15,059,504	3,392 54	396 28	1 47	62.0	11.7	1,487,228 dozens.	60
1,299,922	5,713,651	1,648 01	374 94	1 27	55.6	22.8	3,935,684 pairs.	61

## YEAR 1900.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

No.	Character of Industries.	Number of establishments considered.	Capital invested in plants and working capital.	Cost of basic material.	Average number of days in operation.	Number of workmen employed.
62.	Suspenders, .....	2	\$150,000	\$440,000	298	212
63.	Hats and caps, .....	3	360,735	508,555	282	614
64.	Fur and felt hats, .....	4	3,077,842	729,924	309	1,687
65.	Wool hats, .....	7	462,722	471,032	294	563
66.	Umbrellas and parasols, .....	4	353,000	769,178	306	506
67.	Dress trimmings, braids, etc., .....	8	1,411,475	1,029,684	302	1,745
68.	Shirts and shirt waists, .....	9	979,700	1,411,543	299	2,338
69.	Neckwear, .....	3	135,000	247,396	308	189
70.	Cotton and woolen cloths, ..	24	4,032,930	4,519,160	278	5,724
71.	Carpets, .....	17	3,624,415	3,512,455	297	2,794
72.	Cotton goods, .....	16	3,313,177	1,813,600	290	2,223
73.	Woolen and worsted cassi- meres, .....	11	1,382,000	1,754,645	289	1,927
74.	Woolen and worsted fabrics,	16	3,516,532	4,110,454	293	3,917
75.	Woolen and worsted yarn, ..	12	2,738,600	2,370,290	279	1,641
76.	Rugs, yarns, etc., .....	5	5,406,791	2,059,524	292	3,179
77.	Carpet yarns, .....	11	1,041,068	1,188,499	277	670
78.	Cotton yarns, .....	7	1,311,543	987,430	295	870
79.	Worsted, woolen and cotton yarns, .....	10	2,720,252	2,887,072	294	2,210
80.	Woolen blankets, flannels, etc., .....	5	853,909	737,822	303	894
81.	Lace goods, .....	3	886,044	384,509	303	1,251
82.	Chenille goods, .....	3	515,000	401,696	301	654
83.	Upholstery goods, .....	10	2,412,546	1,546,240	269	2,128
84.	Knit goods, underwear, .....	13	2,096,610	2,926,399	291	3,188
85.	Hosiery, .....	31	3,117,842	2,634,225	287	6,593
86.	Silk, broad goods, thrown- silk, yarns, etc., .....	6	2,102,500	4,598,479	282	3,790
87.	Silk, broad goods and rib- bons, .....	2	1,700,000	1,128,292	299	1,750
88.	Silk—Ribbons, .....	4	504,168	478,708	283	728
Total, .....		801	\$256,952,657	\$183,881,071	288	186,916

## YEAR 1900.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

Aggregate wages paid to workmen.	Market value of production.	Average value of production for each workman employed.	Average yearly earnings.	Average daily wage.	Relative per cent. basic material to value of production.	Relative per cent. wages to value of production.	Total production in tons or given quantity.	No.
\$76,250	\$624,000	\$2,493 40	\$359 67	\$1 21	70.5	12.2	266,000 dozens.	62
211,921	901,917	1,468 92	345 15	1 22	56.4	23.5	111,091 dozens.	63
808,461	2,494,914	1,478 90	479 23	1 55	29.3	32.4	78,437 dozens.	64
217,479	931,034	1,653 70	386 29	1 31	50.6	23.4	271,322 dozens.	65
135,101	1,134,223	2,241 55	267 00	87	67.8	11.9	865,998 pieces.	66
533,502	2,195,940	1,258 42	305 73	1 01	46.9	24.3	.....	67
733,667	2,808,677	1,201 32	313 80	1 05	50.3	26.1	398,536 dozens.	68
69,247	414,292	2,192 02	366 39	1 19	59.7	16.7	.....	69
1,994,236	8,183,908	1,429 75	348 40	1 25	55.2	29.4	.....	70
1,162,693	5,790,677	2,072 54	416 14	1 40	60.7	20.1	13,510,867 yards.	71
1,111,846	3,724,764	1,155 68	344 97	1 19	48.7	29.9	.....	72
691,354	3,421,168	1,775 39	358 77	1 24	51.2	20.2	.....	73
1,356,306	7,042,519	1,797 04	346 26	1 18	58.4	19.3	.....	74
531,039	4,239,957	2,583 76	323 61	1 16	55.9	12.5	9,383,095 pounds.	75
1,173,598	4,552,504	1,436 12	370 22	1 27	45.2	25.8	.....	76
244,411	1,737,441	2,593 20	364 79	1 32	68.4	14.1	14,337,341 pounds.	77
261,937	1,568,971	1,803 41	301 08	1 02	62.9	16.7	8,941,662 pounds.	78
653,421	4,424,815	2,002 18	295 67	1 00	65.2	14.8	7,076,277 pounds.	79
323,711	1,676,132	1,874 87	362 09	1 20	44.0	19.3	.....	80
372,460	1,337,964	1,069 51	297 73	98	28.7	27.8	.....	81
251,665	728,013	1,113 17	384 81	1 28	55.2	34.6	.....	82
842,390	3,153,140	1,481 74	395 86	1 47	49.0	26.7	.....	83
811,968	4,330,995	1,358 53	254 73	88	67.5	18.7	.....	84
1,796,880	5,816,615	862 24	272 54	95	45.3	30.9	5,939,122 dozens.	85
896,322	6,319,225	1,667 34	236 50	84	72.8	14.2	.....	86
465,000	2,784,047	1,590 88	265 71	89	40.5	16.7	6,388,130 yards.	87
221,341	1,044,713	1,503 73	304 04	1 07	43.7	20.2	15,209,686 yards.	88
\$81,828,899	\$355,819,108	\$1,903 42	\$437 74	\$1 52	51.7	23.0	.....	

## YEAR 1901.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

No.	Character of Industries.	Number of establishments considered.	Capital invested in plants and working capital.	Cost of basic material.	Average number of days in operation.	Number of workmen employed.
1.	Steel castings, .....	7	\$5,394,265	\$574,406	302	1,478
2.	Steel billets, slabs, blooms, etc., .....	4	3,791,119	14,531,245	290	1,833
3.	Tool steel, etc., .....	3	1,050,000	126,488	295	167
4.	Iron and steel forgings, .....	7	585,600	281,056	278	482
5.	Iron specialties, .....	2	55,500	53,750	301	53
6.	Malleable iron, .....	4	1,594,090	873,539	286	1,905
7.	Bolts, nuts, etc., .....	8	2,377,009	1,431,237	306	1,573
8.	Wire nails, rivets, etc., .....	4	535,000	443,771	301	255
9.	Tacks and small nails, .....	4	158,500	70,743	280	142
10.	Wire, .....	5	618,100	216,782	302	258
11.	Wire rope, .....	2	1,400,000	1,089,791	308	393
12.	Wire goods, .....	5	169,989	112,779	294	242
13.	Wagon and carriage axles and springs, .....	6	618,642	324,275	277	618
14.	Scales, etc., .....	4	217,600	126,852	293	183
15.	Stoves, ranges, heaters, etc.,	37	7,348,895	1,255,401	249	3,773
16.	Bath boilers, tanks, etc., ....	2	59,000	49,704	304	44
17.	Hardware specialties, .....	14	3,971,920	951,254	296	3,133
18.	Edge tools, .....	12	1,725,640	500,219	297	1,097
19.	Wrenches, picks, etc., .....	5	575,000	225,495	281	357
20.	Locomotives and cars built and repaired, .....	3	1,520,800	6,483,061	304	7,498
21.	Wrought iron pipe and tubes,	5	14,101,131	15,141,057	284	6,574
22.	Cast iron pipe, .....	3	916,776	1,254,082	315	841
23.	Brass, copper and bronze goods, .....	19	2,161,666	2,517,719	305	1,769
24.	Iron and steel bridges, .....	7	1,951,050	3,802,840	309	2,076
25.	Locomotives, stationery en- gines, etc., .....	9	15,440,434	12,289,340	303	13,298
26.	Engines, boilers, etc., .....	10	4,337,000	2,489,348	303	2,533
27.	Cars, springs, axles and rail- way supplies, .....	12	23,482,047	18,693,414	308	9,737
28.	Iron vessels and engines, ....	3	12,247,131	5,978,086	330	6,268

## YEAR 1901.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

Aggregate wages paid to workmen.	Market value of production.	Average value of production for each workman employed.	Average yearly earnings.	Average daily wage.	Relative per cent. basic material to value of production.	Relative per cent. wages to value of production.	Total production in tons or given quantity.	No.
\$734,578	\$2,542,494	\$1,720 23	\$497 01	\$1 65	22.6	28.9	30,501 tons.	1
1,411,838	17,992,938	9,789 41	768 14	2 65	81.0	7.8	\$63,499 tons.	2
131,830	664,097	3,976 63	789 40	2 68	19.0	19.9	2,424 tons.	3
255,175	754,797	1,565 97	529 41	1 90	37.2	33.8	9,401 tons.	4
25,372	105,750	1,995 28	478 72	1 59	50.8	24.0	1,265 tons.	5
939,514	2,153,732	1,139 57	493 18	1 72	40.6	43.6	33,182 tons.	6
571,990	2,515,995	1,599 49	363 63	1 19	57.1	22.7	41,183 tons.	7
115,167	795,616	3,120 06	451 64	1.50	55.8	14.5	15,159 tons.	8
49,715	200,528	1,412 17	350 11	1 25	35.3	24.8	2,311 tons.	9
107,069	459,569	1,781 28	415 00	1 37	47.2	23.3	4,889 tons.	10
169,682	1,693,920	4,310 23	431 76	1 40	64.4	10.0	6,707 tons.	11
72,771	376,397	1,555 36	300 70	1 02	30.0	19.3	.....	12
306,789	\$67,646	1,403 96	496 42	1 79	37.4	35.4	.....	13
111,951	400,587	2,189 00	611 75	2 09	31.7	27.9	.....	14
2,084,170	5,048,054	1,337 94	552 39	2 22	24.8	41.3	.....	15
20,030	95,958	2,180 86	455 23	1 50	51.8	20.9	.....	16
1,349,901	3,618,381	1,154 92	430 87	1 46	26.3	37.3	.....	17
494,080	1,488,852	1,357 20	450 39	1 52	33.6	33.2	.....	18
183,238	713,089	1,997 45	513 27	1 83	31.6	25.7	.....	19
4,953,043	11,622,675	1,550 10	612 57	2 02	55.8	39.5	.....	20
3,301,349	27,381,482	4,165 12	502 18	1 77	55.3	12.1	410,878 tons.	21
402,535	2,004,285	2,382 22	478 64	1 52	62.6	20.0	78,122 tons.	22
845,903	4,069,549	2,312 24	480 62	1 58	61.9	20.8	.....	23
1,176,736	6,432,504	3,098 51	506 83	1 83	59.1	18.3	.....	24
8,314,869	27,094,502	2,037 49	625 27	2 06	45.4	30.7	.....	25
1,425,785	5,100,778	2,013 73	562 88	1 86	48.8	27.9	.....	26
5,245,106	28,678,934	2,945 35	538 68	1 77	65.0	18.3	.....	27
3,587,294	10,619,270	1,694 24	572 32	1 73	56.3	33.8	.....	28

YEAR 1901.

RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

No.	Character of Industries.	Number of establishments considered.	Capital invested in plants and working capital.	Cost of basic material.	Average number of days in operation.	Number of workmen employed.
29.	Boilers, tanks, stacks, etc.,..	21	2,640,108	2,567,205	298	2,135
30.	Machinery, .....	21	11,451,866	3,825,721	307	6,342
31.	Foundries and machine shops,	25	4,236,480	2,080,142	303	3,622
32.	Files, etc., .....	2	515,000	118,953	288	415
33.	Saws, .....	3	334,000	44,758	288	57
34.	Plumbers' supplies, .....	3	2,274,610	485,511	332	1,086
35.	Electrical supplies, .....	4	18,488,343	5,696,529	300	7,212
36.	Shovels, spades, scoops, etc.,	8	766,100	541,074	283	592
37.	Safes and vault doors, .....	2	178,262	148,595	303	224
38.	Metal and metallic goods, ...	3	390,600	99,610	294	252
39.	Building and structural iron work, .....	2	833,950	3,327,881	306	2,286
40.	Iron chains, .....	5	351,174	239,113	290	288
41.	Iron fences and railings, ....	7	113,628	206,195	306	220
42.	Agricultural implements, ....	12	2,189,000	1,494,064	302	1,594
43.	Steam pumps, .....	2	503,522	178,558	302	231
44.	Bicycles, .....	3	240,000	139,241	274	97
45.	Pianos and organs, .....	2	358,081	83,646	296	150
46.	Tinware, .....	5	578,000	337,778	272	461
47.	Paper manufactories, .....	8	5,799,229	1,776,599	293	1,725
48.	Wall paper, .....	4	800,000	650,626	285	371
49.	Cigars, .....	46	4,071,578	3,965,446	294	8,866
50.	Book binding, .....	3	140,000	95,214	290	183
51.	Cordage, ropes, twine, etc.,	5	3,510,000	5,676,078	300	2,294
52.	Paper, paper boxes, envelopes, etc., .....	27	1,512,207	1,158,423	301	2,138
53.	Pottery, .....	2	505,000	72,323	304	171
54.	Paving brick, .....	7	638,707	37,076	234	553
55.	Building brick, .....	35	3,652,539	181,600	230	1,954
56.	Fire brick, .....	18	2,998,426	724,698	298	3,787
57.	Slate roofing, etc., tonnage,..	6	1,043,453	42,098	268	907
58.	Slate roofing, etc., squares,..	14	553,814	86,468	254	1,578
59.	Window glass, bottles, and table goods, .....	22	13,706,456	1,790,190	256	8,829
60.	Glazed and chrome kid, ...	7	5,931,303	9,553,784	298	4,783
61.	Men's, women's, misses and children's shoes, .....	15	2,490,918	3,346,106	299	3,524



## YEAR 1901.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

Aggregate wages paid to workmen.	Market value of production.	Average value of production for each workman employed.	Average yearly earnings.	Average daily wage.	Relative per cent. basic material to value of production.	Relative per cent. wages to value of production.	Total production in tons or given quantity.	No.
1,060,002	4,758,297	2,228 71	496 49	1 66	53.9	22.3	.....	29
3,497,092	10,493,408	1,654 59	551 42	1 80	36.5	23.3	.....	30
1,975,184	5,911,565	1,632 12	545 33	1 80	35.2	23.4	.....	31
154,565	589,335	1,420 09	372 45	1 29	20.2	26.2	.....	32
33,271	128,426	2,253 09	583 70	2 03	31.9	25.9	.....	33
527,899	1,431,561	1,318 19	486 09	1 46	33.9	36.9	.....	34
4,116,501	16,297,597	2,259 79	570 78	1 90	34.9	25.3	.....	35
289,145	1,612,469	2,723 76	488 42	1 73	33.5	17.9	.....	36
101,822	333,538	1,489 00	454 60	1 59	44.6	20.5	.....	37
117,163	344,926	1,368 75	464 93	1 58	28.9	33.9	.....	38
1,199,639	6,403,461	2,801 16	524 78	1 72	51.9	18.7	.....	39
142,794	561,193	1,948 59	495 81	1 71	42.6	25.4	5,956 tons.	40
103,420	379,015	1,722 80	470 09	1 54	54.4	27.3	.....	41
817,229	3,413,376	2,141 37	512 69	1 70	43.7	23.9	.....	42
160,245	411,468	1,781 25	693 70	2 30	43.4	38.9	.....	43
55,269	197,218	2,033 17	569 78	2 08	70.6	28.0	.....	44
65,460	197,752	1,318 35	436 40	1 48	42.3	33.1	.....	45
170,087	639,243	1,386 64	368 95	1 36	52.8	26.6	.....	46
738,509	4,567,498	2,647 82	428 12	1 46	38.9	16.2	71,878 tons.	47
157,042	1,046,365	2,820 39	423 23	1 48	62.2	15.0	29,930,030 rolls.	48
2,698,783	19,344,882	1,166 80	304 40	1 03	38.3	26.1	400,893,737 cigars.	49
103,717	236,637	1,258 71	551 69	1 90	40.2	43.7	.....	50
785,781	7,446,401	3,246 03	342 54	1 14	76.2	10.6	.....	51
597,941	2,493,536	1,166 29	279 67	98	46.5	24.0	.....	52
83,136	246,060	1,439 00	486 17	1 60	29.4	33.8	.....	53
206,868	412,809	746 49	374 08	1 60	9.0	50.1	.....	54
733,827	1,722,242	881 39	375 55	1 63	10.5	42.6	213,696,165 bricks.	55
1,622,480	3,221,632	850 71	428 42	1 44	22.5	50.4	693,977 tons.	56
362,028	729,002	802 75	399 15	1 49	5.8	49.7	68,902 tons.	57
615,681	967,230	612 95	390 16	1 54	8.9	63.7	286,526 squares.	58
3,971,494	8,723,430	989 05	450 28	1 76	20.5	45.5	.....	59
2,111,284	19,364,997	4,048 71	441 41	1 48	49.3	10.9	1,851,886 dozens.	60
1,347,012	5,773,618	1,638 37	382 24	1 28	58.0	23.3	3,914,210 pairs.	61

## YEAR 1901.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

No.	Character of Industries.	Number of establishments considered.	Capital invested in plants and working capital.	Cost of basic material.	Average number of days in operation.	Number of workmen employed.
62.	Suspenders, .....	2	\$170,500	\$476,000	298	198
63.	Hats and caps, .....	3	375,548	467,440	287	631
64.	Fur and felt hats, .....	4	3,074,323	873,632	308	2,060
65.	Wool hats, .....	7	489,264	386,829	282	533
66.	Umbrellas and parasols, .....	4	350,819	907,717	306	522
67.	Dress trimmings, braids, etc., .....	8	1,529,063	958,843	292	1,660
68.	Shirts and shirt waists, .....	9	967,900	1,403,516	299	2,419
69.	Neckwear, .....	3	135,850	222,189	303	181
70.	Cotton and woolen cloths, ..	24	4,198,393	4,452,102	280	5,341
71.	Carpets, .....	17	3,623,328	3,882,593	298	2,801
72.	Cotton goods, .....	16	3,363,442	1,863,117	287	3,119
73.	Woolen and worsted cassimeres, .....	11	1,382,000	2,014,917	278	1,971
74.	Woolen and worsted fabrics, .....	16	3,711,989	3,701,075	291	3,294
75.	Woolen and worsted yarns, .....	12	2,749,500	2,999,031	292	1,658
76.	Rugs, yarns, etc., .....	5	5,161,001	2,047,869	270	3,219
77.	Carpet yarns, .....	11	1,074,009	1,249,013	291	683
78.	Cotton yarns, .....	7	1,426,207	837,474	285	720
79.	Worsted, woolen and cotton yarns, .....	10	2,839,511	2,715,543	273	2,277
80.	Woolen blankets, flannels, etc., .....	5	851,526	887,731	291	912
81.	Lace goods, .....	3	913,154	438,178	302	1,233
82.	Chenille goods, .....	3	640,000	426,241	304	630
83.	Upholstery goods, .....	10	2,141,085	1,537,781	287	2,216
84.	Knit goods, underwear, .....	13	2,181,429	2,537,073	282	2,980
85.	Hosiery, .....	31	3,303,176	2,737,834	290	6,756
86.	Silk—Broad goods, thrown-silk, yarns, etc., .....	6	2,097,500	3,646,366	262	4,033
87.	Silk—Broad goods and ribbons, .....	2	1,700,000	1,202,479	301	2,409
88.	Silk—Ribbons, .....	4	556,521	676,037	302	909
Total, .....		801	\$253,190,931	\$188,207,662	293	192,972

## YEAR 1901.

## RECAPITULATION OF COMPARATIVE TABLE BY YEARS, 1896 SERIES.

Aggregate wages paid to workmen.	Market value of production.	Average value of production for each workman employed.	Average yearly earnings.	Average daily wage.	Relative per cent. basic material to value of production.	Relative per cent. wages to value of production.	Total production in tons or given quantity.	No.
61,400	701,000	3,540 40	310 10	1 04	67.9	8.8	450,000 dozens.	62
244,900	1,046,651	1,514 69	354 41	1 23	44.7	23.4	139,964 dozens.	63
980,610	2,954,738	1,434 34	476 02	1 55	29.6	33.2	90,025 dozens.	64
187,791	788,215	1,465 08	349 06	1 24	49.1	23.8	241,190 dozens.	65
144,419	1,243,643	2,382 46	276 66	90	73.0	11.6	979,913 pieces.	66
494,333	2,034,319	1,218 89	296 18	1 01	47.1	24.3	.....	67
774,447	2,886,635	1,193 32	320 15	1 07	48.6	26.8	389,018 dozens.	68
57,388	359,704	1,987 31	317 06	1 03	61.8	15.9	.....	69
1,878,847	7,925,125	1,483 83	351 78	1 26	56.2	23.7	.....	70
1,254,800	6,553,397	2,339 66	447 98	1 50	59.3	19.2	14,978,827 yards.	71
1,045,654	3,682,324	1,183 27	336 00	1 17	50.6	28.4	.....	72
694,124	3,854,917	1,955 82	352 17	1 27	52.3	18.0	.....	73
1,133,513	6,220,518	1,888 44	345 62	1 19	59.5	18.3	.....	74
578,871	4,487,135	2,706 35	349 14	1 19	66.8	12.9	9,156,971 pounds.	75
1,179,748	4,241,326	1,321 70	367 64	1 32	48.3	27.3	.....	76
265,572	1,797,185	2,612 19	386 01	1 33	63.9	14.8	14,603,056 pounds.	77
229,243	1,328,065	1,844 53	318 39	1 12	63.1	17.3	7,935,951 pounds.	78
616,151	4,069,413	1,787 18	270 60	99	66.7	15.1	7,151,229 pounds.	79
299,492	1,670,231	1,831 39	328 39	1 13	53.2	17.9	.....	80
382,726	1,422,392	1,157 02	309 96	1 02	30.6	26.7	.....	81
270,854	791,504	1,163 98	398 32	1 31	53.9	34.2	.....	82
914,677	3,339,940	1,507 19	412 76	1 44	46.0	27.4	.....	83
766,663	3,950,409	1,325 64	257 27	91	64.2	19.4	.....	84
1,874,579	6,082,610	900 33	277 47	96	45.0	30.8	6,166,032 dozens.	85
886,216	5,664,636	1,404 57	219 74	84	64.4	15.6	.....	86
542,822	3,207,575	1,336 49	226 18	75	37.5	16.9	3,163,175 yards.	87
313,691	1,419,536	1,561 65	345 09	1 14	47.6	22.1	23,694,069 yards.	88
\$86,828,341	\$370,625,709	\$1,920 62	\$449 95	\$1 53	50.8	23.4	.....	

## RESUME.

TOTAL, SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899,  
1900 AND 1901.

Years.	Character of Industries.	Number of estab- lishments considered.	Capital in- vested in plants, and working capital.	Cost of basic material.	Average number of days in operation.	Number of workmen employed.
1896, .....		801	\$200,109,865	\$92,612,814	270	131,260
1897, .....		801	201,889,872	102,239,370	286	137,027
1898, .....		801	207,219,841	115,605,138	286	153,006
1899, .....		801	239,377,197	165,089,595	288	175,641
1900, .....		801	256,952,657	183,881,071	288	186,936
1901, .....		801	253,190,931	188,207,662	293	192,972

## RESUME.

TOTAL, SAME ESTABLISHMENTS FOR THE YEARS 1896, 1897, 1898, 1899,  
1900 AND 1901.

Aggregate wages paid to workmen.	Market value of produc- tion.	Average value of produc- tion for each workman employed.	Average yearly earn- ings.	Average daily wage.	Relative per cent. basic material to value of pro- duction.	Relative per cent. wages to value of produc- tion.
\$50,084,767	\$158,038,106	\$1,432 56	\$381 56	\$1 41	49.2	26.6
52,504,050	205,222,150	1,497 75	383 17	1 34	49.3	26.6
60,377,532	240,813,543	1,572 96	394 38	1 38	48.1	25.1
76,669,979	324,725,616	1,848 80	436 52	1 52	50.8	23.6
81,828,899	355,819,108	1,903 42	437 74	1 52	51.7	23.0
86,828,341	370,625,709	1,920 62	449 95	1 53	50.8	23.4

COMPARISON OF TOTALS, ALL ESTABLISHMENTS (801) FOR  
THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Years.	Total number of es- tablish- ments consid- ered.	Totals.	Increase (+) or de- crease (—) as com- pared with preced- ing year.		Increase (+) or de- crease (—) 1901 as compared with 1896.	
			Amounts.	Per- centage.	Amounts.	Per- centage.

## CAPITAL INVESTED.

1896, .....	801	\$200,109,865	\$	.....	\$	.....
1897, .....	801	201,889,872	+1,780,007	+0.9	.....	.....
1898, .....	801	207,219,841	+5,329,969	+2.6	.....	.....
1899, .....	801	239,377,197	+32,157,356	+15.5	.....	.....
1900, .....	801	256,952,657	+17,575,460	+7.3	.....	.....
1901, .....	801	253,190,931	—3,761,726	—1.4	+53,081,066	+26.5

VALUE OF BASIC MA-  
TERIAL.

1896, .....	801	\$92,612,814	.....	.....	.....	.....
1897, .....	801	102,239,370	+9,626,556	+10.4	.....	.....
1898, .....	801	115,605,138	+13,365,768	+13.1	.....	.....
1899, .....	801	165,089,595	+49,484,457	+42.8	.....	.....
1900, .....	801	183,881,071	+18,791,476	+11.4	.....	.....
1901, .....	801	188,207,662	+4,326,591	+2.4	+95,594,848	+103.2

AVERAGE NUMBER OF  
DAYS IN OPERATION.

1896, .....	801	270	.....	.....	.....	.....
1897, .....	801	286	+16	+5.9	.....	.....
1898, .....	801	286	.....	.....	.....	.....
1899, .....	801	288	+2	+1.7	.....	.....
1900, .....	801	288	.....	.....	.....	.....
1901, .....	801	293	+5	+1.7	+23	+8.5

NUMBER OF PERSONS  
EMPLOYED.

1896, .....	801	131,260	.....	.....	.....	.....
1897, .....	801	137,027	+5,767	+4.4	.....	.....
1898, .....	801	153,096	+16,069	+11.7	.....	.....
1899, .....	801	175,641	+22,545	+14.7	.....	.....
1900, .....	801	186,936	+11,295	+6.4	.....	.....
1901, .....	801	192,972	+6,036	+3.2	+61,712	+47.0



COMPARISON OF TOTALS, ALL ESTABLISHMENTS (801) FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Years.	Total number of establishments considered.	Totals.	Increase (+) or decrease (—) as compared with preceding year.		Increase (+) or decrease (—) 1901 as compared with 1896.	
			Amounts.	Per-centage.	Amounts.	Per-centage.

AGGREGATE AMOUNT OF WAGES PAID.

1896, .....	801	\$50,084,767	\$	.....	\$	.....
1897, .....	801	52,504,050	+2,419,283	+4.8	.....	.....
1898, .....	807	60,377,592	+7,873,542	+15.0	.....	.....
1899, .....	801	76,669,979	+16,292,387	+27.0	.....	.....
1900, .....	801	81,828,899	+5,158,920	+6.7	.....	.....
1901, .....	801	86,828,341	+4,999,442	+6.1	+36,743,574	+73.4

MARKET VALUE OF PRODUCTION.

1896, .....	801	\$188,033,106	.....	.....	.....	.....
1897, .....	801	205,232,150	+17,194,044	+9.1	.....	.....
1898, .....	801	240,813,543	+35,581,393	+17.3	.....	.....
1899, .....	801	324,725,616	+83,912,073	+34.8	.....	.....
1900, .....	801	355,819,108	+31,093,492	+9.6	.....	.....
1901, .....	801	370,625,709	+14,806,601	+4.2	+182,587,603	+97.1

AVERAGE YEARLY EARNINGS.

1896, .....	801	\$381 56	.....	.....	.....	.....
1897, .....	801	383 17	+1 61	+ .4	.....	.....
1898, .....	801	394 38	+11 21	+2.9	.....	.....
1899, .....	801	436 52	+42 14	+10.7	.....	.....
1900, .....	801	437 74	+1 22	+ .3	.....	.....
1901, .....	801	449 95	+12 21	+2.8	+68 39	+17.9

AVERAGE DAILY WAGE.

			Cts.		Cts.	
1896, .....	801	\$1 41	.....	.....	.....	.....
1897, .....	801	1 34	—07	—5.0	.....	.....
1898, .....	801	1 38	+04	+3.0	.....	.....
1899, .....	801	1 52	+14	+10.1	.....	.....
1900, .....	801	1 52	.....	.....	.....	.....
1901, .....	801	1 53	+01	+ .7	+12	+8.5

# COMPARISON OF TOTALS, ALL ESTABLISHMENTS (801) FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Years.	Total number of establishments considered.	Totals.	Increase (+) or decrease (—) as compared with preceding year.		Increase (+) or decrease (—) 1901 as compared with 1896.	
			Amounts.	Percentage.	Amounts.	Percentage.

## VALUE OF PRODUCTION DURING THE YEAR TO EACH EMPLOYEE.

1896, .....	801	\$1,432 56	\$	.....	\$	.....
1897, .....	801	1,497 75	+65 19	+4.5	.....	.....
1898, .....	801	1,572 96	+75 21	+5.0	.....	.....
1899, .....	801	1,848 80	+275 84	+17.6	.....	.....
1900, .....	801	1,903 42	+54 62	+2.9	.....	.....
1901, .....	801	1,920 62	+17 20	+1.9	+488 06	+34.1

## RELATIVE PER CENT. BASIC MATERIAL TO VALUE OF PRODUCTION.

1896, .....	801	49.2	.....	.....	.....	.....
1897, .....	801	49.3	+1	.....	.....	.....
1898, .....	801	48.1	—1.2	.....	.....	.....
1899, .....	801	50.8	+2.7	.....	.....	.....
1900, .....	801	51.7	+1.9	.....	.....	.....
1901, .....	801	50.8	—1.9	.....	+1.6	.....

## RELATIVE PER CENT. WAGES TO VALUE OF PRODUCTION.

1896, .....	801	26.6	.....	.....	.....	.....
1897, .....	801	25.6	—1.0	.....	.....	.....
1898, .....	801	25.1	—1.5	.....	.....	.....
1899, .....	801	23.6	—1.5	.....	.....	.....
1900, .....	801	23.0	—1.6	.....	.....	.....
1901, .....	801	23.4	+1.4	.....	—3.2	.....

## PIG IRON PRODUCTION IN PENNSYLVANIA FOR 1901.

Capital invested, .....	\$152,075,575
Gross tons of production, .....	7,364,295
Realized value, .....	\$106,883,000
Average realized value per ton, .....	\$14 52
Value of basic material, ore and scrap or cinder only (fuel, limestone, management, office help and all other items of expense are not considered,) .....	\$53,511,173
Average cost of basic material per ton, .....	\$7 27
Average days in operation, .....	323
Total number of workmen employed, .....	14,749
Aggregate wages paid to these workmen, .....	\$8,646,479
Average earnings for the year, .....	\$586 24
Average daily wage, .....	\$1 85
Cost of labor per ton, .....	\$1 17
Tonnage per man per day, .....	1.55

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# COMPARISON OF PIG IRON PRODUCTION FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Years.	Totals.	Increase (+) or decrease (—) as compared with preceding year.		Increase (+) or decrease (—) 1901 as compared with 1896.	
		Amounts.	Percentage.	Amounts.	Percentage.
GROSS TONS PRODUCED.					
1896, .....	4,026,350	.....	.....	.....	.....
1897, .....	4,617,634	+591,284	+14.7	.....	.....
1898, .....	5,367,979	+750,345	+16.2	.....	.....
1899, .....	6,542,998	+1,175,019	+21.9	.....	.....
1900, .....	6,371,688	—171,310	—2.6	.....	.....
1901, .....	7,364,295	+992,607	+15.6	+3,337,945	+82.9
REALIZED VALUE OF PRODUCTION.					
1896, .....	\$45,172,039	\$	.....	\$	.....
1897, .....	48,884,854	+3,712,815	+8.2	.....	.....
1898, .....	53,331,228	+4,446,374	+9.1	.....	.....
1899, .....	98,203,803	+44,872,575	+44.1	.....	.....
1900, .....	105,449,923	+7,246,120	+7.4	.....	.....
1901, .....	106,883,000	+1,433,077	+1.4	+61,710,961	+136.7
AVERAGE REALIZED VALUE PER TON.					
1896, .....	\$11 21	.....	.....	.....	.....
1897, .....	10 58	—0 63	—5.6	.....	.....
1898, .....	9 94	—0.64	—6.0	.....	.....
1899, .....	15 01	+5.07	+51.0	.....	.....
1900, .....	16 55	+1.54	+10.3	.....	.....
1901, .....	14 52	—2.03	—12.0	+3.31	+29.5
AGGREGATE COST OF BASIC MATERIAL.					
1896, .....	\$26,251,420	\$	.....	\$	.....
1897, .....	29,962,533	+3,711,113	+14.1	.....	.....
1898, .....	29,377,637	—584,876	—1.9	.....	.....
1899, .....	38,861,664	+9,484,007	+32.5	.....	.....
1900, .....	51,090,782	+12,229,118	+31.5	.....	.....
1901, .....	53,511,173	+2,420,391	+4.7	+27,259,753	+103.8

# COMPARISON OF PIG IRON PRODUCTION FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Years.	Totals.	Increase (+) or decrease (—) as compared with preceding year.		Increase (+) or decrease (—) 1901 as compared with 1896.	
		Amounts.	Percentage.	Amounts.	Percentage.

## AVERAGE NUMBER OF WORKMEN EMPLOYED.

1896, .....	11,580.....				
1897, .....	11,272	—308	—2.7		
1898, .....	11,911	+629	+5.6		
1899, .....	15,347	+3,436	+28.8		
1900, .....	15,785	+438	+2.8		
1901, .....	14,749	—1,036	—6.6	+3,169	+27.4

## AVERAGE DAYS OF EMPLOYMENT.

1896, .....	239				
1897, .....	306	+17	+5.9		
1898, .....	336	+30	+9.8		
1899, .....	327	—9	—2.7		
1900, .....	323	—4	—1.2		
1901, .....	323			+34	+11.8

## AGGREGATE AMOUNT OF WAGES PAID.

1896, .....	\$4,589,165	\$		\$	
1897, .....	4,676,970	+87,805	+1.9		
1898, .....	5,268,503	+591,533	+12.6		
1899, .....	7,599,533	+2,331,030	+44.2		
1900, .....	8,500,194	+900,661	+11.8		
1901, .....	8,646,479	+146,285	+1.7	+4,057,314	+88.4

## AVERAGE YEARLY EARNINGS.

1896, .....	\$396 50	\$		\$	
1897, .....	414 92	+18 62	+4.7		
1898, .....	442 32	+27.40	+6.6		
1899, .....	495 18	+52.86	+11.9		
1900, .....	538 50	+43 32	+8.8		
1901, .....	586 24	+47 74	+8.9	+189.94	+47.9

# COMPARISON OF PIG IRON PRODUCTION FOR THE YEARS 1896, 1897, 1898, 1899, 1900 AND 1901.

Years.	Totals.	Increase (+) or decrease (—) as compared with preceding year.		Increase (+) or decrease (—) 1901 as compared with 1896.	
		Amounts.	Percentage.	Amounts.	Percentage.

## AVERAGE DAILY WAGE.

				Cents,	
1896, .....	\$1 37	\$	.....	.....	.....
1897, .....	1 36	—01	—7	.....	.....
1898, .....	1 32	—04	—3.0	.....	.....
1899, .....	1 51	+19	+14.4	.....	.....
1900, .....	1 67	+16	+10.6	.....	.....
1901, .....	1 85	+18	+19.8	+48	+35.0

## AVERAGE COST OF LABOR PER TON.

				Cents,	
1896, .....	\$1 14	\$	.....	.....	.....
1897, .....	1 01	—13	—11.4	.....	.....
1898, .....	98	—03	—2.9	.....	.....
1899, .....	1 16	+18	+18.3	.....	.....
1900, .....	1 33	+17	+14.7	.....	.....
1901, .....	1 17	—16	—12.0	+03	+2.6

## AVERAGE COST OF BASIC MATERIAL PER TON.

				Cents,	
1896, .....	\$6 52	\$	.....	.....	.....
1897, .....	6 48	—04	—6	.....	.....
1898, .....	5 48	—1 00	—15 4	.....	.....
1899, .....	5 94	+46	+8.4	.....	.....
1900, .....	8 02	+2 08	+35.2	.....	.....
1901, .....	7 27	—75	—9.4	+75	+11.5



# PRODUCTION OF PIG IRON BY COUNTIES AND RELATIVE PER CENT.

	Gross Tons.	Per cent.
Allegheny, .....	3,685,665	50.048
Mercer, .....	622,877	8.458
Cambria, .....	511,533	6.946
Lebanon, .....	382,436	5.193
Lawrence, .....	359,260	4.878
Dauphin, .....	312,400	4.242
Berks, .....	265,065	3.599
Lehigh, .....	239,579	3.253
Northampton, .....	179,647	2.439
Montgomery, .....	170,816	2.319
Bedford, .....	99,534	1.351
Lackawanna, .....	80,241	1.089
Fayette, .....	77,914	1.058
Jefferson, .....	68,342	.928
Armstrong, .....	55,000	.747
Delaware, .....	42,003	.570
Centre, .....	42,000	.570
Cameron, .....	37,723	.519
Westmoreland, .....	37,347	.507
Carbon, .....	32,227	.438
Bucks, .....	30,025	.407
York, .....	15,154	.205
Perry, .....	13,600	.184
Mifflin, .....	1,954	.026
Huntingdon, .....	1,953	.026
Totals, .....	7,364,295	100

# PRODUCTION OF STEEL FOR 1901 BY ESTABLISHMENTS NOT HAVING ROLLING MILLS.

Capital invested, .....	\$6,579,822
Average days in operation, .....	306
Average number of working people employed, .....	4,443
Aggregate wages paid these working people, .....	\$2,727,592
Steel ingots and casting:	
Bessemer (acid), gross tons, .....	15,005
Open hearth (acid), gross tons, .....	59,001
Open hearth (basic), gross tons, .....	5,954
Crucible and other processes, gross tons, .....	2,800
Total tons, .....	82,760
Average yearly earnings, .....	\$613 91
Average daily wage, .....	\$2 00
Value of production, .....	\$8,407,752

## PRODUCTION OF STEEL IN PENNSYLVANIA FOR 1901.

	Gross Tons.
Bessemer, .....	4,319,144
Open hearth "acid process," .....	736,720
Open hearth "basic process," .....	2,818,108
Crucible and other processes, .....	85,748
	<hr/>
Total, .....	7,959,720
	<hr/> <hr/>

**PRODUCTION OF STEEL IN 1901 AS COMPARED WITH 1896,  
1897, 1898, 1899 AND 1900.**

Years.	Gross Tons.	Increase (+) or decrease (—) as compared with preceding year.		Increase (+) or decrease (—) 1901 as compared with 1896.	
		Amounts.	Per-centage.	Amounts.	Per-centage.
BESSEMER.					
1896, .....	2,292,814	.....	.....	.....	.....
1897, .....	2,848,204	+555,390	+24.2	.....	.....
1898, .....	3,357,684	+509,480	+17.9	.....	.....
1899, .....	3,971,835	+614,151	+18.3	.....	.....
1900, .....	3,488,569	—433,266	—12.2	.....	.....
1901, .....	4,319,144	+830,575	+23.8	+2,026,330	+88.4
OPEN HEARTH.					
1896, .....	1,009,608	.....	.....	.....	.....
1897, .....	1,421,373	+411,765	+40.8	.....	.....
1898, .....	1,848,732	+427,359	+30.1	.....	.....
1899, .....	2,398,210	+549,478	+29.7	.....	.....
1900, .....	2,702,968	+304,758	+12.7	.....	.....
1901, .....	3,554,828	+851,860	+31.5	+2,545,220	+252.1
CRUCIBLE AND OTHER PROCESSES.					
1896, .....	43,107	.....	.....	.....	.....
1897, .....	49,245	+6,138	+14.2	.....	.....
1898, .....	69,568	+20,323	+41.2	.....	.....
1899, .....	76,114	+6,546	+9.4	.....	.....
1900, .....	64,500	—11,614	—15.3	.....	.....
1901, .....	85,748	+21,248	+32.9	+42,641	+98.9
TOTAL PRODUCTION.					
1896, .....	3,345,529	.....	.....	.....	.....
1897, .....	4,318,622	+973,093	+29.0	.....	.....
1898, .....	5,275,984	+957,362	+22.2	.....	.....
1899, .....	6,446,159	+1,170,175	+22.2	.....	.....
1900, .....	6,256,775	—189,384	—2.9	.....	.....
1901, .....	7,959,720	+1,702,945	+27.2	+4,614,191	+137.9

PRODUCTION OF STEEL IN 1901 BY COUNTIES WITH RELATIVE PER CENT.

	Gross Tons.	Per cent.
Allegheny, .....	5,140,580	64.582
Cambria, .....	655,775	8.239
Dauphin, .....	426,787	5.362
Lackawanna, .....	351,845	4.420
Chester, .....	308,990	3.882
Lawrence, .....	267,174	3.357
Mercer, .....	217,518	2.733
Montgomery, .....	198,150	2.489
Westmoreland, .....	152,715	1.919
Northampton, .....	68,796	.864
Philadelphia, .....	61,111	.768
Delaware, .....	60,597	.761
Mifflin, .....	23,101	.290
Armstrong, .....	14,193	.178
Venango, .....	3,969	.050
York, .....	3,700	.046
Berks, .....	3,570	.045
Washington, .....	634	.008
Crawford, .....	275	.004
Beaver, .....	176	.002
Erie, .....	64	.001
Totals, .....	7,959,720	100

# PRODUCTION OF ROLLED IRON AND STEEL IN PENNSYLVANIA FOR 1901 (GROSS TONS).

Capital invested, ..... \$232,108,715

\*Production (gross tons), ..... 8,668,337

Classified as follows:

Rails, ..... 1,406,532

Iron and steel structural shapes, .... 916,013

Cut nails and cut spikes, ..... 37,349

†Plates and sheets including black  
plate for tinning, ..... 1,590,502

Other rolled products, including bil-  
lets, sheet bar, tin bar, etc. not fur-  
ther finished by the mills reporting, 4,717,941

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Value not including the production of the tin plate  
works, ..... \$298,284,259

Average number of workmen employed exclusive of the  
tin plate works, ..... 86,086

Aggregate wages paid to these workmen, ..... \$53,334,787

Average days in operation, ..... 280

Average yearly earnings, ..... \$619 55

Average daily wage, ..... \$2 21

Average value per ton, ..... \$35 30

Cost of labor per ton, ..... \$6 31

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\*For a better understanding of Production and Value, see Analysis of Rolled Iron and Steel.  
†Includes 218,432 tons of black plate and other sheets made by the Tin Plate Works.



PRODUCTION OF ROLLED IRON AND STEEL, INCLUDING  
BLACK PLATE FOR TINNING, IN 1901, BY COUNTIES, WITH  
RELATIVE PER CENT.

	Gross Tons.	Per cent.
Allegheny, .....	5,095,608	58.784
Dauphin, .....	497,985	5.745
Cambria, .....	443,655	5.118
Montgomery, .....	339,617	3.918
Lawrence, .....	335,074	3.866
Lackawanna, .....	326,609	3.768
Westmoreland, .....	275,921	3.183
Chester, .....	271,742	3.135
Mercer, .....	263,861	3.044
Montour, .....	92,760	1.070
Lebanon, .....	86,528	.997
Berks, .....	86,405	.997
Lehigh, .....	84,157	.970
Philadelphia, .....	79,968	.923
Blair, .....	57,930	.668
Lancaster, .....	54,867	.633
Mifflin, .....	41,137	.475
Northumberland, .....	37,937	.438
Northampton, .....	36,781	.424
Washington, .....	32,646	.377
Columbia, .....	31,285	.361
Delaware, .....	24,817	.286

PRODUCTION OF ROLLED IRON AND STEEL, INCLUDING  
BLACK PLATE FOR TINNING, IN 1901, BY COUNTIES, WITH  
RELATIVE PER CENT.—Continued.

	Gross Tons.	Per cent.
Lycoming, .....	13,029	.150
Perry, .....	12,623	.146
Armstrong, .....	9,100	.105
Fayette, .....	7,848	.090
York, .....	6,840	.079
Bucks, .....	6,694	.077
Schuylkill, .....	6,364	.074
Greene, .....	4,048	.047
Beaver, .....	2,075	.024
Centre, .....	1,826	.021
Luzerne, .....	600	.007
	<hr/>	<hr/>
Totals, .....	8,668,337	100
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# COMPARISON OF ROLLED IRON AND STEEL FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Years.	Totals.	Increase (+) or decrease (—) as compared with preceding year.		Increase (+) or decrease (—) 1901 as compared with 1896.	
		Amounts.	Percentage.	Amounts.	Percentage.

## CAPITAL INVESTED

1896, .....	\$123,951,317	\$	.....	\$	.....
1897, .....	129,500,796	+5,549,479	+4.5	.....	.....
1898, .....	134,126,188	+4,625,392	+3.6	.....	.....
1899, .....	144,428,965	+10,302,777	+7.7	.....	.....
1900, .....	184,006,675	+39,577,710	+27.4	.....	.....
1901, .....	232,108,715	+48,102,040	+26.1	+108,157,398	+87.2

## IRON AND STEEL RAILS—PRODUCTION (GROSS TONS).

1896, .....	674,651	.....	.....	.....	.....
1897, .....	973,513	+298,867	+44.3	.....	.....
1898, .....	1,069,365	+95,847	+9.8	.....	.....
1899, .....	1,231,979	+162,614	+15.2	.....	.....
1900, .....	1,198,098	—33,881	—2.7	.....	.....
1901, .....	1,406,532	+208,434	+17.4	+731,881	+108.5

## PLATES AND SHEETS (GROSS TONS).

1896, .....	630,861	.....	.....	.....	.....
1897, .....	679,133	+48,272	+7.7	.....	.....
1898, .....	899,364	+220,231	+32.4	.....	.....
1899, .....	1,100,303	+200,939	+22.3	.....	.....
1900, .....	1,598,034	+497,731	+45.2	.....	.....
1901, .....	1,590,502	—7,532	—5	+959,641	+152.1

## CUT NAILS AND CUT SPIKES (GROSS TONS).

1896, .....	28,840	.....	.....	.....	.....
1897, .....	44,165	+15,325	+53.1	.....	.....
1898, .....	30,690	—14,075	—31.9	.....	.....
1899, .....	41,458	+11,369	+37.8	.....	.....
1900, .....	24,289	—17,170	—41.4	.....	.....
1901, .....	27,349	+13,060	+53.3	+8,509	+29.5

# COMPARISON OF ROLLED IRON AND STEEL FOR THE YEARS, 1896, 1897, 1898, 1899, 1900 AND 1901.

Years.	Totals.	Increase (+) or decrease (—) as compared with preceding year.		Increase (+) or decrease (—) 1901 as compared with 1896.	
		Amounts.	Percentage.	Amounts.	centage. Per-

## AVERAGE NUMBER OF DAYS IN OPERATION.

1896, .....	251	.....	.....	.....	.....
1897, .....	269	+18	+7.2	.....	.....
1898, .....	278	+9	+3.3	.....	.....
1899, .....	287	+9	+3.2	.....	.....
1900, .....	272	—15	—5.2	.....	.....
1901, .....	280	+8	+2.9	+29	+11.5

## AVERAGE EARNINGS FOR THE YEAR.

1896, .....	\$444 89	\$	.....	\$	.....
1897, .....	461 19	+16 30	+3.6	.....	.....
1898, .....	495 81	+34 62	+7.5	.....	.....
1899, .....	559 00	+63 19	+12.7	.....	.....
1900, .....	573 97	+14 97	+2.7	.....	.....
1901, .....	619 55	+45 58	+7.9	+174 66	+39.3

## AVERAGE DAILY WAGE.

		Cts.		Cts.	
1896, .....	\$1 77	.....	.....	.....	.....
1897, .....	1 71	—06	—3.4	.....	.....
1898, .....	1 78	+07	+4.1	.....	.....
1899, .....	1 95	+17	+9.5	.....	.....
1900, .....	2 11	+16	+8 2	.....	.....
1901, .....	2 21	+10	+4.7	+44	+2.5

## AVERAGE COST OF LABOR PER TON.

1896, .....	\$6 34	.....	.....	.....	.....
1897, .....	5 16	—1 18	—18 6	.....	.....
1898, .....	5 03	—13	—2.5	.....	.....
1899, .....	6 65	+62	+12.3	.....	.....
1900, .....	6 26	—39	—5.9	.....	.....
1901, .....	6 15	—11	—3.0	—19	—3.0

## TIN PLATE.

## PRODUCTION OF TIN PLATE (BLACK PLATE WORKS), IN PENNSYLVANIA FOR 1901.—(NET TONS.)

Number of plants in operation, .....	22
Capital invested, .....	\$10,525,000
Production of black plate, in pounds, .....	435,628,000
Quantity of black plate tinned, in pounds, .....	377,430,000
Quantity of black plate not tinned, pounds, .....	58,198,000
Value of this black plate not tinned, .....	\$1,940,486
Value of the tinned production, .....	\$15,084,852
Total value of entire production tinned and untinned, .....	\$17,025,338
Average value per hundred pounds of tinned production, .....	\$4 00
Average value per ton of 2,000 pounds of black plate not tinned, .....	\$66 69
Tonnage of sheets not black plate, .....	26,830
Value of sheets other than black plate, .....	\$1,531,813
Average number of days in operation, .....	228
Average number of working people employed, .....	8,188
Aggregate amount of wages paid to the working people, .....	\$4,593,561
Average earnings for the year, .....	\$561 01
Average daily wage, .....	\$2 46
Total number of hot mills, .....	164
Total number of tinning sets, .....	225
Daily capacity black plate, net tons, .....	1,229
Daily tinning capacity, net tons, .....	975

## TIN PLATE.

BLACK PLATE WORKS, 1901, AS COMPARED WITH 1896, 1897, 1898, 1899  
AND 1900.

Years.	Number of es- tablish- ments in operation.	Totals.	Increase (+) or de- crease (—) as com- pared with preced- ing year.		Increase (+) or de- crease (—) 1901 as compared with 1896.		
			Amounts.	Per- centage.	Amounts.	Per- centage.	
CAPITAL INVESTED.							
1896, .....	13	\$3,627,275	\$	.....	\$	.....	
1897, .....	15	5,017,127	+1,289,852	+38.3	.....	.....	
1898, .....	18	7,903,000	+2,885,873	+57.5	.....	.....	
1899, .....	21	8,150,000	+247,000	+3.1	.....	.....	
1900, .....	17	9,771,888	+1,621,888	+19.9	.....	.....	
1901, .....	22	10,525,000	+753,112	+7.8	+6,897,725	+190.2	
QUANTITY, IN POUNDS, OF BLACK PLATE PRODUCED AND TIN- NED.							
1896, .....	13	97,814,762	.....	.....	.....	.....	
1897, .....	15	179,705,766	+81,891,004	+83.7	.....	.....	
1898, .....	18	222,528,000	+42,822,234	+23.8	.....	.....	
1899, .....	21	292,164,734	+69,636,734	+31.3	.....	.....	
1900, .....	17	264,306,000	—27,858,734	—9.5	.....	.....	
1901, .....	22	377,430,000	+113,124,000	+42.8	+279,615,233	+285.3	
QUANTITY OF POUNDS PRODUCED AND NOT TINNED.							
1896, .....	13	60,491,728	.....	.....	.....	.....	
1897, .....	15	74,451,835	+13,960,107	+23.1	.....	.....	
1898, .....	18	121,536,000	+47,084,165	+63.2	.....	.....	
1899, .....	21	76,436,000	—45,100,000	—37.1	.....	.....	
1900, .....	17	47,696,000	—28,740,000	—37.6	.....	.....	
1901, .....	22	58,198,000	+10,502,000	+22.3	—2,293,728	—3.3	
ENTIRE PRODUCTION OF BLACK PLATE, IN POUNDS, TINNED AND UNTINNED.							
1896, .....	13	158,306,490	.....	.....	.....	.....	
1897, .....	15	254,157,601	+95,851,111	+60.5	.....	.....	
1898, .....	18	344,064,000	+89,906,399	+35.4	.....	.....	
1899, .....	21	368,600,734	+24,536,734	+7.1	.....	.....	
1900, .....	17	312,002,000	—56,598,734	—15.4	.....	.....	
1901, .....	22	435,628,000	+123,626,000	+39.6	+277,321,510	+175.2	



TIN PLATE.

BLACK PLATE WORKS, 1901, AS COMPARED WITH 1896, 1897, 1898, 1899  
AND 1900—Continued.

Years.	Number of es- tablish- ments in operation.	Totals.	Increase (+) or de- crease (—) as com- pared with preced- ing year.		Increase (+) or de- crease (—) 1901 as compared with 1896.	
			Amounts.	Per- centage.	Amounts.	Per- centage.

VALUE OF TIN AND  
TERNE PLATE PRO-  
DUCED.

1896, .....	13	\$3,157,699	\$	.....	\$	.....
1897, .....	15	5,180,624	+2,022,925	+64.0	.....	.....
1898, .....	18	6,697,921	+1,517,297	+29.5	.....	.....
1899, .....	21	10,249,841	+3,551,920	+53.0	.....	.....
1900, .....	17	10,936,510	+686,669	+6.7	.....	.....
1901, .....	22	15,084,852	+4,148,342	+37.9	+11,927,153	+377.7

VALUE OF THE BLACK  
PLATE NOT TINNED.

1896, .....	13	\$1,480,112	\$	.....	.....	.....
1897, .....	15	1,657,297	+177,185	+11.9	.....	.....
1898, .....	18	2,646,314	+989,017	+59.7	.....	.....
1899, .....	21	1,902,691	—743,623	—28.1	.....	.....
1900, .....	17	1,654,387	—248,304	—13.0	.....	.....
1901, .....	22	1,940,486	+286,099	+17.3	+460,374	+31.0

VALUE OF ENTIRE PRO-  
DUCTION OF BLACK  
PLATE TINNED AND  
UNTINNED.

1896, .....	13	\$4,637,811	\$	.....	.....	.....
1897, .....	15	6,837,921	+2,200,110	+47.4	.....	.....
1898, .....	18	9,344,235	+2,506,314	+36.6	.....	.....
1899, .....	21	12,152,532	+2,808,297	+30.1	.....	.....
1900, .....	17	12,590,897	+438,365	+3.6	.....	.....
1901, .....	22	17,025,338	+4,434,441	+35.2	+12,387,527	+267.1

VALUE PER 100 POUNDS  
OF TIN AND TERNE  
PLATE.

			Cts.		Cts.	
1896, .....	13	\$3 23	.....	.....	.....	.....
1897, .....	15	2 88	—35	—10.9	.....	.....
1898, .....	18	3 01	+13	+4.5	.....	.....
1899, .....	21	3 51	+50	+16.6	.....	.....
1900, .....	17	4 14	+63	+17.9	.....	.....
1901, .....	22	4 00	—14	—3.4	+77	+23.9

## TIN PLATE.

BLACK PLATE WORKS, 1901, AS COMPARED WITH 1896, 1897, 1898, 1899  
AND 1900—Continued.

Years.	Number of es- tablish- ments in operation.	Totals.	Increase (+) or de- crease (—) as com- pared with preced- ing year.		Increase (+) or de- crease (—) 1901 as compared with 1896.	
			Amounts.	Per- centage.	Amounts.	Per- centage.
VALUE PER TON OF 2,- 000 POUNDS OF BLACK PLATE NOT TINNED.						
1896, .....	13	\$48 93	\$	.....	\$	.....
1897, .....	15	44 51	—4 42	—9.0	.....	.....
1898, .....	18	43 83	—68	—1.5	.....	.....
1899, .....	21	49 79	+5 96	+13.6	.....	.....
1900, .....	17	69 37	+19 58	+39.3	.....	.....
1901, .....	22	66 69	—2 68	—3.9	+17 76	+36.3
AVERAGE NUMBER OF DAYS IN OPERATION.						
1896, .....	13	250	.....	.....	.....	.....
1897, .....	15	281	+31	+12.4	.....	.....
1898, .....	18	278	—3	—1.0	.....	.....
1899, .....	21	223	—55	—19.8	.....	.....
1900, .....	17	199	—24	—10.1	.....	.....
1901, .....	22	228	+29	+14.6	—22	—8.8
AVERAGE NUMBER OF WORKING PEOPLE EMPLOYED.						
1896, .....	13	3,194	.....	.....	.....	.....
1897, .....	15	3,920	+726	+22.7	.....	.....
1898, .....	18	5,036	+1,116	+28.5	.....	.....
1899, .....	21	7,682	+2,646	+52.5	.....	.....
1900, .....	17	7,394	—288	—3.7	.....	.....
1901, .....	22	8,188	+794	+10.8	+4,994	+156.3
AGGREGATE AMOUNT OF WAGES PAID.						
1896, .....	13	\$1,437,226	\$	.....	\$	.....
1897, .....	15	2,227,217	+789,991	+54.9	.....	.....
1898, .....	18	2,943,954	+716,737	+32.2	.....	.....
1899, .....	21	4,054,395	+1,110,441	+37.7	.....	.....
1900, .....	17	3,526,934	—527,461	—13.0	.....	.....
1901, .....	22	4,593,561	+1,066,627	+30.2	+3,156,335	+219.6

TIN PLATE.

BLACK PLATE WORKS, 1901, AS COMPARED WITH 1896, 1897, 1898, 1899  
AND 1900—Continued.

Years.	Number of es- tablish- ments in operation.	Totals.	Increase (+) or de- crease (—) as com- pared with preced- ing year.		Increase (+) or de- crease (—) 1901 as compared with 1896.	
			Amounts.	Per- centage.	Amounts.	Per- centage.
AVERAGE YEARLY EARNINGS.						
1896, .....	13	\$456 55	\$	.....	\$	.....
1897, .....	15	568 17	+111 62	.....	.....	.....
1898, .....	18	584 58	+16 41	.....	.....	.....
1899, .....	21	527 78	—56 80	.....	.....	.....
1900, .....	17	477 00	—50 78	.....	.....	.....
1901, .....	22	561 01	+84 01	+17.6	+104 46	+22.9
AVERAGE DAILY WAGE.						
			Cts.		Cts.	
1896, .....	13	\$1 80	.....	.....	.....	.....
1897, .....	15	2 02	+22	.....	.....	.....
1898, .....	18	2 10	+08	.....	.....	.....
1899, .....	21	2 36	+26	.....	.....	.....
1900, .....	17	2 40	+04	.....	.....	.....
1901, .....	23	2 46	+06	+2.5	+66	+56.7

## PRODUCTION OF TIN PLATE, DIPPING WORKS, 1901.

(The dipping works buy all their black plate.)

Number of plants in operation, .....	5
Number of tinning sets, .....	45
Daily capacity in net tons, .....	200
Value of plants, .....	\$610,503
Average number of days in operation, .....	283
Average number of working people employed, .....	372
Aggregate amount of wages paid to these working people, .....	\$157,262
Total production, in pounds, tin and terne, .....	44,210,000
Total value of production, .....	\$2,527,178
Average value per net ton, .....	\$114 33
Average value per 100 pounds, .....	\$5 72
Average earnings for the year, .....	\$422 75
Average daily wage, .....	\$1 49

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## COMBINED PRODUCTION OF TIN AND TERNE PLATE BY THE BLACK PLATE WORKS AND THE DIPPING WORKS, 1901.

Total production in pounds of tin and terne plate, ..	421,640,000
Total value, .....	\$17,612,030
Average value per hundred pounds, .....	\$4 18

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COMBINED PRODUCTION OF TIN AND TERNE PLATE BY THE BLACK PLATE AND DIPPING WORKS, IN 1901, AS COMPARED WITH 1896, 1897, 1898, 1899 AND 1900.

Years.	Totals.	Increase (+) or De-crease (—) as com- pared with preced- ing year.		Increase (+) or de- crease (—) 1901 as compared with 1896.	
		Amounts.	Per- centage.	Amounts.	Per- centage.
TOTAL NUMBER OF POUNDS TIN AND TERNE PLATE.					
1896, .....	139,588,703 .....	.....	.....	.....	.....
1897, .....	225,611,766 .....	+86,053,063 .....	+61.6 .....	.....	.....
1898, .....	262,934,000 .....	+37,292,234 .....	+16.5 .....	.....	.....
1899, .....	331,082,734 .....	+68,148,734 .....	+25.9 .....	.....	.....
1900, .....	297,854,000 .....	—33,228,734 .....	—10.0 .....	.....	.....
1901, .....	421,640,000 .....	+123,786,000 .....	+41.6 .....	+282 051,297 .....	+202.1 .....
TOTAL VALUE.					
1896, .....	\$5,045,097 .....	\$ .....	.....	\$ .....	.....
1897, .....	6,997,041 .....	+1,951,944 .....	+38.7 .....	.....	.....
1898, .....	8,445,097 .....	+1,448,056 .....	+20.7 .....	.....	.....
1899, .....	12,165,879 .....	+3,720,782 .....	+44.1 .....	.....	.....
1900, .....	13,044,487 .....	+878,608 .....	+7.2 .....	.....	.....
1901, .....	17,612,030 .....	+4,567,543 .....	+35.0 .....	+12,566.933 .....	+249.1 .....
AVERAGE VALUE PER HUN- DRED POUNDS.					
		Cts.		Cts.	
1896, .....	\$3 61 .....	.....	.....	.....	.....
1897, .....	3 10 .....	—51 .....	—14.1 .....	.....	.....
1898, .....	3 21 .....	+11 .....	+3.5 .....	.....	.....
1899, .....	3 67 .....	+46 .....	+14.3 .....	.....	.....
1900, .....	4 38 .....	+71 .....	+19.3 .....	.....	.....
1901, .....	4 18 .....	—20 .....	—4.7 .....	+57 .....	+15.8 .....

## BLACK PLATE PRODUCTION BY COUNTIES, 1901.

PRODUCTION AND RELATIVE PER CENT. BY COUNTIES OF BLACK PLATE PRODUCED AT THE BLACK PLATE WORKS, PICKLED AND READY FOR TINNING.

Counties.	Net Tons.	Per cent.
Lawrence, .....	96,640	44.37
Westmoreland, .....	52,178	23.96
Allegheny, .....	24,307	11.16
Mercer, .....	15,195	6.97
Washington, .....	10,394	4.77
Fayette, .....	7,267	3.34
Dauphin, .....	6,400	2.94
Greene, .....	4,533	2.08
Montgomery, .....	900	0.41
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Totals, .....	217,814	100
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## TIN AND TERNE PLATE BY COUNTIES (DIPPING WORKS).

RELATIVE PER CENT., BY COUNTIES, OF TIN AND TERNE PLATE PRODUCED 1901 BY THE DIPPING WORKS. (BUY THEIR TIN PLATE.)

Counties.	Net Tons.	Per cent.
Philadelphia, .....	15,693	71.00
Allegheny, .....	6,412	29.00
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Totals, .....	22,105	100
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PRODUCTION OF TIN AND TERN PLATE IN 1901 AT THE  
BLACK PLATE WORKS BY COUNTIES, AND RELATIVE  
PER CENT.

Counties.	Net Tons.	Per cent.
Lawrence, .....	91,299	48.38
Westmoreland, .....	48,646	25.78
Allegheny, .....	21,549	11.42
Washington, .....	9,025	4.78
Fayette, .....	6,968	3.69
Mercer, .....	6,714	3.56
Greene, .....	3,509	1.86
Dauphin, .....	1,005	0.53
Totals, .....	188,715	100

TOTAL TIN PLATE BY COUNTIES.

PRODUCTION AND RELATIVE PER CENT., BY COUNTIES, OF TIN AND  
TERNE PLATE PRODUCED BY THE BLACK PLATE WORKS AND DIP-  
PING WORKS COMBINED, 1901.

Counties.	Net Tons.	Per cent.
Lawrence, .....	91,299	43.32
Westmoreland, .....	48,646	23.07
Allegheny, .....	27,961	13.26
Philadelphia, .....	15,693	7.44
Washington, .....	9,025	4.28
Fayette, .....	6,968	3.30
Mercer, .....	6,714	3.19
Greene, .....	3,509	1.66
Dauphin, .....	1,005	48
Totals, .....	210,820	100

## THE MANUFACTURE OF CEMENT IN PENNSYLVANIA FOR 1901.

Number of firms having active plants in 1901, .....	14
Capital invested, .....	\$19,271,981
Production:	
Portland (barrels), .....	6,873,203
Natural (barrels), .....	851,866
Improved (barrels), .....	230,600
Total production in barrels, .....	7,955,669
Market or realized value, .....	\$7,334,891
Aggregate of wages paid, .....	\$2,212,457
Average number of workmen employed, .....	5,080
Average number of days in operation, .....	326
Average earnings for the year, .....	\$435 52
Average daily wage, .....	\$1 34

## DIRECTORY OF THE ACTIVE CEMENT WORKS FOR 1901.

Firm.	Location.	Postoffice Address.
American Cement Co., .....	Egypt, Lehigh county, .....	22 S. Fifteenth street, Philadelphia.
The Atlas Portland Cement Co., .....	Coplay and Northampton, Lehigh and Northampton counties.	Northampton, Pa.
Bonneville Portland Cement Co., .....	Seigfreid, Northampton county,	604 Fidelity Building, Philadelphia.
Coplay Cement Co., .....	Coplay, Lehigh county, .....	Coplay, Pa.
Lehigh Portland Cement Co., ..	Wampum, Lawrence county, ..	Second National Bank Building, Pittsburg.
Dexter Portland Cement Co., ..	Nazareth, Northampton county,	Nazareth, Pa.
The Lawrence Cement Co., of Penna., ..	Seigfried, Northampton county,	Seigfried, Pa.
Lehigh Portland cement Co., ...	Ormrod and West Coplay, Lehigh county.	Allentown, Pa.
Martin's Creek Portland Cement Co., .....	Martin's Creek, Northampton county.	1523 Real Estate Trust Building, Philadelphia.
Nazareth Cement Co., .....	Nazareth, Northampton county,	Nazareth, Pa.
Northampton Portland Cement Co., .....	Stockertown, Northampton county.	Stockertown, Pa.
Phoenix Cement Co., .....	Nazareth, Northampton county,	Nazareth, Pa.
Reading Cement Co., .....	Evansville, Columbia county, ..	Reading, Pa.
Whitehall Portland Cement Co., ..	Cementon, Lehigh county, ....	Reading Terminal, Philadelphia.

# THE TANNING INDUSTRY IN PENNSYLVANIA FOR 1901— LEATHER TANNED, CURRIED AND FINISHED.

Number of active plants in 1901, .....	200
Capital invested, .....	\$64,582,517
Average number of days in operation, .....	299
Average number of wage earners, .....	15,365
Classified as follows:	

Males, .....	14,307
Females, .....	545
Children, .....	713

Aggregate of wages paid wage earners, .....	\$6,580,552
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## Apportioned as follows:

Males, .....	\$6,304,408
Females, .....	141,224
Children, .....	134,920

## Average yearly earnings:

Males, .....	\$440 65
Females, .....	259 13
Children, .....	189 23

## Average daily wage:

Males, .....	\$1 47
Females, .....	.87
Children, .....	.63

Value of the production, not including by-products,....	\$69,202,533
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## Classified as follows:

432,442 sides grain leather, value, .....	\$1,093,206
434,630 sides oak leather, value, .....	1,653,466
7,708,431 sides hemlock leather, value, .....	22,837,428
397,855 sides upper leather, value, .....	1,012,181
364,158 sides harness leather, value, .....	2,137,819
2,900,437 sides union leather, value, .....	12,220,732
1,267,902 sides split leather, value, .....	1,203,316
354,023 kip and calf skins, value, .....	685 553
195,300 patent and enameled leather, value, .....	519,249
28,492,260 goat skins, value, .....	25,090,390
778,773 sheep skins, value, .....	346,990
15,529 horse hides, value, .....	47,656
Other skins, .....	354,547

## THE MANUFACTURE OF BOOTS AND SHOES IN PENNSYLVANIA FOR 1901.

Number of factories in operation, .....	120
Capital invested in realty, buildings, machinery, tools, and in the conduct of the business, .....	\$5,336,077
Average days in operation, .....	280
Average number of wage earners, .....	9,342

### Classified as follows:

Males, .....	5,438
Females, .....	3,269
Children, .....	635

Aggregate of wages paid to wage earners, .....	\$3,059,579
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### Apportioned as follows:

Males, .....	\$2,192,090
Females, .....	789,270
Children, .....	78,219

### Average yearly earnings:

Males, .....	\$403 11
Females, .....	241 44
Children, .....	123 18

### Average daily wage:

Males, .....	\$1 44
Females, .....	.86
Children, .....	.44

Total production in pairs, .....	12,387,168
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### Classified as follows:

Men's shoes, slippers, etc., .....	1,459,657
Women's shoes, slippers, etc., .....	3,686,091
Misses' shoes, slippers, etc., .....	950,370
Youths' and boys' shoes, etc., .....	870,676
Children's and infants', .....	5,170,332
Not classified, .....	250,042

Market or realized value of entire production, .....	\$13,602,712
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## THE MANUFACTURE OF RUBBER BOOTS AND SHOES FOR 1901.

Number of factories in operation, .....	2
Capital invested in realty, buildings, machinery, tools, and in the conduct of the business, .....	\$800,000
Average days of operation, .....	285
Average number of wage earners, .....	1,063
Classified as follows:	
Males, .....	621
Females, .....	412
Children, .....	30
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Aggregate of wages paid to wage earners, .....	\$328,247
Apportioned as follows:	
Males, .....	\$234,303
Females, .....	90,784
Children, .....	3,160
<hr/>	
Average yearly earnings:	
Males, .....	\$377 30
Females, .....	220 35
Children, .....	105 33
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Average daily wage:	
Males, .....	\$1 32
Females, .....	.77
Children, .....	.37
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Production in pairs, .....	2,658,730
Market or realized value of production, .....	\$1,697,817
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## DIRECTORY OF PENNSYLVANIA'S BOOT AND SHOE MANUFACTURERS IN 1901.

### PHILADELPHIA.

American Shoe Manufacturing Company, children's, misses', ladies', little gents', youths', and boys' shoes, .....	Front and Laurel streets.
Allen & Company, misses', children's and infants' shoes, .....	222 North Third street.
Brenninger, Henry G., boys' shoes, .....	1851 East Hutingdon street.
Brown, William, clogs, .....	2508 Frankford avenue.
Buek & Company, women's, misses', children's and infants' shoes, .....	125 North Fifth street.
Croxtan, Wood & Company, ladies' shoes, ....	255 North Fourth street.
Driesbach, William, men's slippers, .....	347 North Fourth street.
Duling Shoe Company, ladies', misses' and children's shoes, .....	823 Filbert street.
Dunn, Michael J., children's shoes, .....	150 Green street.
Elkin, M. & Company, ladies' shoes, .....	417 Arch street.
Freedman, Charles & Company, ladies' boots and shoes, .....	125 North Seventh street.
Gibbon, Charles S., ladies' shoes, .....	54 North Fourth street.
Hagel Brothers, infants' shoes, .....	347 North Fourth street.
Hallahan & Sons, women's shoes, .....	236 South Ninth street.
Halliwell, Charles H., clogs, .....	2539 North Front street.
Keystone Shoe Company, infants' and children's turn shoes, .....	307 Race street.
Laird, Schober & Company, ladies', misses', children's and infants' boots and shoes, .....	19th and Buttonwood streets.
Lenox Shoe Company, misses' and children's shoes, .....	1336 Germantown avenue.
Mailbach, Jacob, ladies', misses' and children's shoes, .....	149 North Fourth street.
Marke & Company, ladies' shoes, .....	333 North Fourth street.
Mayer, Alfred, Company, women's shoes and oxfords, .....	304 Race street.
Medlar & Holmes Company, ladies' boots and oxfords, .....	514 Ludlow street.
Mundell, John & Company, army, children's and infants' shoes (since, out of business), .....	13th and Cherry streets.
Munden, George, infants' shoes, .....	326 York avenue.
McBrearty, John, men's and boys' boots and shoes, .....	Broad and Hamilton streets.
Nahm Brothers, ladies', misses' and children's shoes, .....	185 Berks street.
Newman, A., & Company, ladies' comfort shoes and turns of every description, .....	328 Noble street.



Newton, J. R., & Company, ladies' shoes, .....	507 Arch street.
O'Brien & Company, ladies' shoes, .....	218 Dock street.
Passant & Glicy, ladies' shoes, .....	139 North Sixth street.
Phillips, Milton, ladies' shoes, .....	410 Arch street.
Quaker City Shoe Company, men's and boys' shoes, .....	313 Race street.
Roller Brothers & Company, infants' and children's shoes, turns and men's patent leather burial slippers, .....	230 New street.
Smaltz, Goodwin Company, ladies', misses' and children's shoes, .....	11th and Race streets.
Smith, M. A., & Son, men's and women's sporting shoes, .....	25 N. 13th street.
Taylor, H., & Company, men's fine shoes, .....	413 Arch street.
Twohig & Adams, men's boots and shoes, .....	307 Cherry street.
Wise, L. M. infants' shoes, .....	115 North Fifth street.
Ziegler Brothers, ladies', misses' and children's shoes, .....	117 North Fifth street.

## MANUFACTURERS OUTSIDE OF PHILADELPHIA, BY COUNTIES.

## ADAMS.

Deckert & Stough, infants' turn shoes, .....	New Oxford.
Emmert, W. H., children's shoes, .....	New Oxford.
Livingston, E. C., infants' and children's shoes, .	New Oxford.

## BERKS.

Birdsboro Shoe Manufacturing Company, children's shoes, .....	Birdsboro.
Huyett, Elmer R., Infants' turn shoes, .....	Birdsboro.
Huyett & Rhoads, infants' shoes, .....	Birdsboro.
Wills & Lukens, infants' turn shoes, .....	Birdsboro.
Curtis, Jones & Company, infants' and children's shoes, .....	Hamburg.
Keystone Shoe Company, ladies', misses', children's and infants' shoes, .....	Kutztown.
Sancony Shoe Company, children's shoes, .....	Kutztown.
Curtis, Jones & Company, infants' and children's shoes, .....	Reading.
P. & F. Manufacturing Company, infants' and children's turns, .....	Reading.

## BLAIR.

Tyrone Shoe Manufacturing Company, men's welt and heavy shoes, .....	Tyrone.
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## BRADFORD.

Tracy, Charles L., men's and boys' shoes, .....	Towanda.
Troy Shoe Company, infants' and children's turn shoes, .....	Troy.

## BUCKS.

Glenwood Shoe Company, mining and furnace shoes, ..... Ferndale.  
 Shick, William, miners' shoes, ..... Ferndale.  
 Horn, D. L., men's hand pegged and hand sewed boots, ..... Hagersville.  
 Bean, A. J., miners' shoes, ..... Ottsville.  
 Scheid, H. B., boots and shoes, ..... Richland Center.  
 Freed Brothers, men's, boys, youths' and little gents' shoes; ladies', misses and children's shoes; men's and boys' boots, ..... Richlandtown.  
 Bean, T. T., boots and shoes, ..... Riegelsville.

## COLUMBIA.

The W. F. Carmer Shoe Company, women's misses', children's and infants' shoes, ..... Catawissa.

## CUMBERLAND.

Bedford Shoe Company, children's shoes, ..... Carlisle.  
 Carlisle Shoe Company, women's, misses' and children's welts, turns and McKays, ..... Carlisle.  
 The Lindner Shoe Company, ladies', misses' and children's shoes, ..... Carlisle.

## DAUPHIN.

Halifax Shoe Company, ladies', misses' and children's shoes, ..... Halifax.  
 Prenzel, A. H., & Company, infants' and children's turn shoes, ..... Halifax.  
 The Bay Shoe Company, women's, misses' and children's shoes, ..... 716 State street, Harrisburg.  
 Harrisburg Boot and Shoe Manufacturing Company, Limited, women's, misses' and children's shoes, ..... 1404 Vernon st., Harrisburg.  
 The E. H. Waters Company, infants' shoes and moccasins, ..... Basin and Wyeth Aves, Hbg.  
 Hummelstown Shoe Company, women's, misses' and children's shoes, ..... Hummelstown.  
 Johnson Baillie Shoe Company, ladies', misses' and children's shoes, ..... Millersburg.

## FRANKLIN.

Chambersburg Shoe Manufacturing Company, women's, misses' and children's shoes, ..... Chambersburg.

## JUNIATA

Ramsey, The Joseph P., Company, women's McKay sewed shoes (since, out of business), .... Patterson.

## LANCASTER.

Miller, Hess and Company, Limited, misses' and children's shoes, ..... Akron.  
 The Kreider Shoe Manufacturing Company, boys', youths' and little gents' McKay sewed shoes, ..... Elizabethtown.  
 Wensbach, J. A., children's and misses' springs, Rowenna.

## LACKAWANNA.

Olyphant Shoe Company, men's, boys' and youths' shoes (since discontinued), ..... Olyphant.

## LEBANON.

Kreider, A. S., & Company, ladies', misses' and children's McKay sewed and Goodyear welt shoes, ..... Annville.  
 Miller Shoe Company, boys' shoes (since, out of business), ..... Jonestown.  
 North Lebanon Shoe Company, men's and boys' working shoes, ..... Lebanon.  
 Kreider's W. L., Sons, infants' shoes, turns, soft soles and moccasins, ..... Palmyra.  
 Landis, J., & Sons, ladies', misses', children's, boys', youths' and little gents' shoes, ..... Palmyra.

## LEHIGH.

The Allentown Shoe Manufacturing Company, little gents', youths' and boys' shoes, ..... Allentown.  
 The American Shoe Manufacturing Company, men's, women's, misses' and children's shoes, Allentown.  
 Fritz, Walter S., men's, women's, misses', children's calf and miners' brogans, ..... Allentown.  
 Honest Shoe Manufacturing Company, men's, boys', youths', little gents', women's, misses' and children's shoes, ..... Allentown.  
 Leh, H., & Company men's, women's, misses' and children's shoes, ..... Allentown.  
 Lehigh Valley Shoe Company, boys', youths' and gents' Goodyear and McKay shoes, ..... Allentown.  
 Roney & Berger, misses', children's and infants' shoes, ..... Allentown.  
 Schneider, Philip, ladies', misses' and boys' shoes, Allentown.  
 West End Shoe Manufacturing Company, women's shoes (since, discontinued), ..... Allentown.

Wolfe Shoe Manufacturing Company, women's  
and little gents' shoes, ..... Allentown.  
The Alburdis Shoe Manufacturing Company,  
ladies', misses' and children's shoes, ..... Alburdis.  
Stoneback, C. H., men's, boys', youths', women's,  
misses' and children's heavy shoes, ..... Coopersburg.  
Hartman, James K., miners' boots and shoes, . Lynnport.  
Century Shoe Company, Limited, children's turn  
shoes, ..... Macungie.

LUZERNE.

Dooley & Weis, miners' boots and brogans, .... Ashley.

LYCOMING.

The Walsh-Decker Shoe Company, boys', youths'  
and little gents' shoes, ..... Montgomery.  
Dayton, J. E., Company, shoes, ..... Williamsport.

MONTGOMERY.

Stetler, Howard W., brogans, bal. shoes and  
heavy boots, ..... Pennsburg.

NORTHAMPTON.

Easton Boot and Shoe Company, men's, boys'  
and youths' medium grade shoes, ..... Easton.

NORTHUMBERLAND.

Hollister, W. G., miners' and ironworkers' bro-  
gans, ..... Mt. Carmel.  
Watson town Boot and Shoe Company, men's,  
boys' and youths' shoes, ..... Watson town.

SCHULYKILL.

Adams Shoe Company, Limited, children's and  
misses' shoes, ..... Adamsdale.  
Albright, H. S., & Company, children's shoes,  
Goodyear and McKay sewed, ..... Landingville.  
Albright, H. S., & Company, children's shoes,  
Goodyear and McKay sewed, ..... Orwigsburg.  
Brown, A. E., & Company, men's, children's and  
infants' shoes, ..... Orwigsburg.  
Miller, A. M., & Company, misses', children's and  
infants' shoes, ..... Orwigsburg.

Kepner, Scott & Company, ladies', misses', children's and infants' shoes, ..... Orwigsburg.  
 The Rehr Shoe Company, infants' turn shoes, . Orwigsburg.  
 Reliable Shoe Company, ladies', children's and infants' shoes and soft soles, turns,—McKay sewed, ..... Orwigsburg.  
 Zulick, J. S., & Company, misses', children's and infants' shoes and slippers, ..... Orwigsburg.  
 Dengler, John B., turns and soft sole shoes, ... Pottsville.  
 Gerber, G. H., misses', children's and infants' turn shoes, ..... Schuylkill Haven.

## SNYDER.

Eisenhuth, T. H., & Company, ladies', misses' and children's McKay sewed shoes, ..... Selins Grove.

## WAYNE.

Durland Thompson Shoe Company, men's boys', youths', women's, misses' and children's shoes, Honesdale.  
 Honesdale Shoe Company, Incorporated, women's, misses' and children's McKays and welts, ..... Honesdale.

## YORK.

Sheppard & Myers Company, men's fine shoes, Hanover.  
 The Charles Heiser Shoe Manufacturing Company, men's fine Goodyear welt shoes, ..... York.

## RUBBER BOOTS AND SHOES.

## LYCOMING.

Lycoming Rubber Company, ..... Williamsport.

## PHILADELPHIA.

Watkinson, George & Company, ..... 36th and Reed streets.

The following new boot and shoe factories are reported active for 1892.

Bailey Shoe Manufacturing Company, ..... Williamsport.  
 Sunshine Shoe Manufacturing Company, ..... Allentown.  
 H. M. Zulick & Company, ..... Schuylkill Haven.



## AVERAGE DAILY WAGE.

Deductions from the foregoing presentations, and means the average for skilled and unskilled, men, women and children.

Tool steel, .....	\$2 68
Steel billets, slabs and blooms, .....	2 65
Tin plate (black plate works), .....	2 46
Steam pumps, .....	2 30
Stoves, heaters, ranges, etc., .....	2 22
Rolled iron and steel, .....	2 11
Scales, .....	2 09
Bicycles, .....	2 08
Locomotives and stationary engines, .....	2 06
Saws, .....	2 03
Locomotives and cars built and repaired, .....	2 02
Iron and steel forgings, .....	1 90
Electrical supplies, .....	1 90
Book binding, .....	1 90
Engines and boilers, .....	1 86
Iron and steel bridges, .....	1 83
Wrenches, picks, etc, .....	1 83
Pig iron, .....	1 82
Machinery, .....	1 80
Foundries and machine shops, .....	1 80
Wagon and carriages, axles and springs, .....	1 79
Wrought iron pipes and tubes, .....	1 77
Car springs, axles and railway supplies, .....	1 77
Window glass, bottles and table goods, .....	1 76
Iron vessels and engines, .....	1 73
Shovels, spades, scoops, .....	1 73
Malleable iron, .....	1 72
Building and structural iron work, .....	1 72
Iron chains, .....	1 71
Agricultural implements, .....	1 70
Boilers, tanks, stacks, etc., .....	1 66
Steel castings, .....	1 65
Building brick, .....	1 63
Paving bricks, .....	1 60
Pottery, .....	1 60
Iron specialties, .....	1 59
Brass, copper and bronze goods, .....	1 58
Metal and metallic goods, .....	1 58
Fur and felt hats, .....	1 55



Slate roofing (square), .....	1 54
Iron fences and railings, .....	1 54
Edge tools, .....	1 52
Cast iron pipe, .....	1 52
Wire nails, rivets, etc., .....	1 50
Bath boilers, tanks, etc., .....	1 50
Tin plate (dipping works), .....	1 50
Safes and vault doors, .....	1 50
Carpets, .....	1 50
Slate roofing (tonnage), .....	1 49
Pianos and organs, .....	1 48
Wall paper, .....	1 48
Glazed and chrome kid, .....	1 48
Tanneries, males, .....	1 47
Hardware specialties, .....	1 46
Plumber supplies, .....	1 46
Paper manufacture, .....	1 46
Upholstery goods, .....	1 44
Fire brick, .....	1 44
Wire rope, .....	1 40
Wire, .....	1 37
Tinware, .....	1 36
Cement, .....	1 34
Carpet yarns, .....	1 33
Rugs, yarns, etc., .....	1 32
Chenille goods, .....	1 31
Files, .....	1 29
Woolen and worsted cassimers, .....	1 27
Cotton and woolen cloths, .....	1 26
Tacks and small nails, .....	1 25
Wool hats, .....	1 24
Hats and caps, .....	1 23
Bolts and nuts, .....	1 19
Woolen and worsted fabrics, .....	1 19
Woolen and worsted yarns, .....	1 19
Cotton goods, .....	1 17
Cordage, rope and twine, .....	1 14
Silk ribbons, .....	1 14
Woolen blankets, flannels, etc., .....	1 13
Cotton yarns, .....	1 12
Shirts and shirt waists, .....	1 07
Suspenders, .....	1 04
Cigars, .....	1 03
Neckwear, .....	1 03
Wire goods, .....	1 02

Lace goods, .....	1 02
Dress trimmings, braids, etc., .....	1 01
Woolen, worsted and cotton yarns, .....	99
Hosiery, .....	96
Paper, paper boxes and envelopes, .....	93
Knit goods, underwear, .....	91
Umbrellas and parasols, .....	90
Silk, broad goods, thrown silk, yarns, etc, .....	84
Silk, broad goods and ribbons, .....	75

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## COMMUNICATIONS.

The following letters are in reply to the inquiry of the Bureau as quoted in the introduction of this Report. The inquiry was as to the adoption of any successful plan of strike prevention, or information as to any method that may have proved successful in bringing about a better understanding between the employed and the employer.

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### IRON AND STEEL.

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Dear Sir: In answer to your inquiry of the 24th inst. in regard to the labor question, I beg to say that we have not put into practice any new plan with the view of bringing about a better understanding between employer and employes.

I have always regarded the personal equation as of greater importance in adjusting grievances and preventing or settling strikes than any modern patent method that may be devised. In other words, the management of this company endeavors to treat all its employes with entire frankness and absolute fairness, and with due consideration of the merits or demerits of each individual case. A record established on this basis enables us to feel that we can rely in most cases on the good judgment and sense of fairness of our intelligent workmen. Mutual confidence follows, as a matter of course. And if misunderstandings arise, or dissatisfaction exists from any cause on the part of our workmen, they know from past experience that the path to the general office is always open to every one from the highest to the lowest in the service, and their complaints will be promptly heard and adjusted.

And on this basis we have got along so far very well.

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Dear Sir: In response to yours of December 24, 1901, our rules are: 1—Always to give two weeks notice (with the works in operation) of any advance or reduction of wages, and to demand the same. 2—

Always patiently hear any claims of mistakes in pay or other grievances and to conscientiously try to administer strict justice.

A strict adherence to such rules generally obviates trouble, but in times of great excitement, when men's passions are inflamed by outside causes, nothing will do any good but time and idleness. The innocent often have to suffer for the guilty and the just for the oppressions of others.

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Dear Sir: Replying to your circular letter of the 24th we have had no strike at our mill since 1895, and have had no grievances to settle, consequently we have not found it necessary to adopt any plan to bring about a better understanding, etc. We are hopeful that the new committee appointed by the civic federation, etc., at a late conference in New York will be found effective as a means of arbitrating or settling difficulties when they arise.

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Dear Sir: We very carefully note contents of your valued favor of 24th inst. Referring to that part of your letter in which you wish to know if we have put into practice any plan that has proved successful in bringing about a better understanding in adjusting grievances or in preventing or settling strikes and that you would like us to state what course we have pursued, beg to say we have successfully avoided all strikes and have pleasantly settled all differences which have arisen by endeavoring in all cases to treat our employes, as nearly as possible, as we would like to be treated if similarly placed.

When prices permit an advance in wages, we make the advance before our men demand it, and when prices decline, we have them appoint a committee to meet us and we then discuss freely the condition of the market, giving them data and showing them why we are compelled to ask them to work for lower wages. Of course, we have some hot heads among them who would be only too glad at all times to raise a rumpus but a very large majority of our men are reasonable and they rule the small minority.

We believe that it is a great deal easier and better to prevent a strike than to settle a strike. Trusting we have answered your question satisfactorily, we beg to remain.

TIN PLATE.

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Dear Sir: In answer to your inquiry on the subject of the management of labor, we would say that we have had no trouble with our employes in recent years for the reason that we endeavor to treat our men fairly, and employers and employes thus meeting in a spirit of fairmindedness, grievances of whatever description are readily adjusted to the satisfaction of all concerned.

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Dear Sir: In reply to your circular letter of December 24th, we respectfully state that the employees in all our departments, except pattern shop are union men. In pattern shop, part union and part non-union. In our foundry, the National Founders' Association, of which we are members, and the Iron Moulders' Union of North America, have arbitrated all differences in the Philadelphia district, and we are pleased to report no troubles whatever. With our fitters and finishers, blacksmiths and helpers and erectors, we had considerable trouble during the year just closed, arising from the fact that we were desirous of employing either union or non-union men, having regard solely to the capability of the individual workman. After a struggle of several months, we were forced to unionize our fitting and smith shops and to give ten hours pay for nine hours work in shop and ten hours pay for eight hours work outside of shop. This has proven a serious loss to us since we are brought in competition with firms in surrounding towns, where the men have longer hours and less per diem pay. In Philadelphia, the Allied Building Trades' workmen declined to work with any non-union man no matter what his trade. After a series of strikes, this resulted in forcing many of our men into the unions, when they preferred to be non-union and eventually in the unionizing of our shops. Our judgment, as employers is very clear. No man should be questioned whether he is union or non-union, but should be hired simply on the ground of his capability. The attitude of the unions is undemocratic and subversive of the individual rights of the workingman. In its practical outworking it inures to the advantage of the incapable workman, obliging his employer to pay him a wage, he does not deserve, solely because he is a union man. If the prices fixed by the union in the several building trades are forced to a higher figure, it will eventually result in diminished investments in building operations.



FOUNDRIES.

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Dear Sir: Your circular letter of the 24th inst., relative to conciliation as a strike preventive, has been received.

The management of this Company has been carrying out the following plan:

Full pay is given all employes for National holidays, such as July 4th, Thanksgiving Day and Christmas, who report in good condition for duty and work the succeeding day.

On general election days they are paid for the whole day, but given half of it to enable them to dress up and go to the polls.

On other election days they are given several hours for the same purpose.

Once a year they are given excursion tickets for a picnic to some place within reasonable distance, and costing the Company in and about \$2.00 for each ticket.

Any employee injured in the works is placed under the care of a surgeon employed and paid by the Company, and the employee is kept on the pay roll at half pay until he can return to work.

In hot weather ice water is supplied by the Company. Improvements in machinery and appliances to lighten the labor are resorted to and the employees receive decent treatment.

A club room is being fitted up for them where they can meet and play innocent games or read magazines furnished by the Company.

This course has increased the sobriety and self-respect of the employees as well as the quantity and quality of the work done by them and produced good feeling and respect for the management.

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Dear Sir: In reply to your inquiry in reference to labor troubles we make the following remarks. They may not be quite what you are asking for, but we give it to you as our views.

We consider unions the greatest cause of strikes and the producers of the largest amount of labor troubles. (Witness the strikes for a principle wherein neither wages nor hours enter.) Also, so called "Sympathetic strikes" where a lot of men without a grievance paralyze business and demoralize trade because others are striking.

Unions never know when men have secured reasonable demands. As an illustration, in a lecture delivered by a president of one of the Unions a few nights ago (at which the writer was present) he said "they were striking for shorter hours. They were first trying to get eight hours for a days work; when that was accomplished they would fight for seven hours. Hence we ask, what will they not strike for?"

We never had a strike in our works, and don't know whether we have any union men or not. We pay our men fair wages and de-



mand a good days work; give as a rule, steady employment, and provide for their comfort at our works, and look after them when sick or injured.

We believe in the piece work system whereby a competent man can earn what he is worth and a poor workmen the same thing by his worth.

We submit, it is the Heaven Born right of every man to labor: To-wit: No boy should be prevented from learning a trade, which unions do endeavor to prevent, neither should a man be intimidated, beaten or killed because he is satisfied to work when another man refuses to work.

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### MACHINERY.

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Gentlemen: In regard to the question raised in yours of the 24th as to our plan, if we have one, for the prevention of strikes, beg to say we have no plan other than to treat our men as well as we know how, and if they have disagreements of any kind to get together and adjust same, before it is time to cause any ill feeling on the part of either parties and in this connection beg to say we have been especially free from strikes or trouble with our help for a great number of years past.

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Dear Sir: I have before me your circular letter of December 24th. There are many difficult phases to be carefully considered in each case where a strike is brought about.

Our shop is of moderate size, most of the employes skilled machinists, and therefore intelligent.

In our particular case, while the papers had it that our men were out on a strike, the men, with exception of fifteen, said that they did not have any grievance, but if the "union" (one-half dozen only of our men being members) declared a strike, they should not work, nor seek work elsewhere, but quietly take a vacation until settlement was made, being in fear of personal violence and being called scabs by the strikers.

We asked our men to be represented by one of the workmen, who had our mutual confidence, and we readily made a satisfactory agreement by which we close our shop at 1 P. M. Saturdays, instead of 4.30, with three-fourths hour regular noon-time.

This gives the men an opportunity to get home to dinner, get dressed and have an outing with their family.

We could not afford to give the men ten hours pay for nine hours work—Profits would not allow it. We concede them two and one-half hours each week, making fifty-seven and one-half instead of sixty hours.

As a result of the strike, fifteen men remained out, and we pay by the hour, instead of by the week.

I do not think that the men endeavor to produce any more work per day than before, which was one of the claims put forward by the union. To my mind, the so-called unions need to be governed by a better educated class of men than at present—leaders who are broad-minded and not self-seeking. Until then, the skilled workman is better off out of a union.

I favor examination as early as possible, where dissatisfaction is found to exist, and arbitration by fair-minded representatives if possible. There are two sides to every dispute.

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Dear Sir: Regarding strikes we beg to say that we think the only way to avert them is to pass some laws that will make punishable for labor agitators, who make a living out of their agitation, to disturb labor conditions in any factory in the State or Nation. They are only nuisances, not only to the manufacturers, but also to the hands.

We had a strike last summer—some men concluded that, because other shops were having strikes, there should be one here also, and a delegation of our highest priced men waited on me one day, and asked what I was going to do? About what? I said. About giving us a nine hour day. I said, I am perfectly willing to grant you a nine hour day, because to tell the truth I do not believe the average man can give his employer a fair amount of work during ten and three-fourth hours. (This is the length of the usual day here, because we give the men Saturday afternoon, and the only way to do it is to make up the sixty hours during the other days.) They said—Well what about pay? I said they would get just as many hours' pay as they did hours' work. No. they wanted to get ten hours' pay for nine hours' work. Well, I said, you cannot get it here, and if you are not satisfied you better go where you can do better. They then said —Well, we guess we can shut up your shop—I said I had been running this shop for 25 years without trouble, and I thought I might continue to run it, and they departed. One hour afterwards,

I passed through the shop, and found nearly all the men packing up their tools, and in a few minutes all had taken their departure, except the engineer, the foreman and about two other men. For two or three days they hung around the premises, and in one case tried to interfere with the men coming to work; but this soon became burdensome to them, as they were not making a living, and most of them had families to support. In a week we were running again about as usual with a new set of men, and not one of those old hands will ever have the chance to work here again. We have not seen them since, but we have heard that some of them are pretty badly off. Now, there was not the slightest reason for this strike, and we do not think most of them wanted to go out, but they were overinfluenced by the leaders, and they have had to suffer for it.

As we understand the situation, we believe, if a man puts his money into a plant, and pays as high wages as he can afford to pay, and manages to sell his product for enough to make a very small profit, he runs all the risks, and hires his men for whatever wages he can pay. If they are not satisfied, and think they can get more elsewhere, he has no hold over them, and they are free to go wherever they please. This is certainly the case in all other walks of life.

I am not against the men trying to get higher wages. I believe that that is the way to raise the standard, but all men are not worth the same. Where one man is worth \$3.00 another is not worth \$1.50, and there is no reason or justice in his expecting to get the higher figure. As a rule the strikes are not organized by the men who get the highest wages, but the lowest; the men who have brains enough to get high wages usually have sense enough to keep the place that gives them those high wages, and he is not fool enough to enter any action that will deprive him of the opportunity to work for those wages.

Of course the great trouble comes when one employs great masses of men, and they are not individuals, but so many parts of a great machine, and they have to be treated in a mass. Not having been in that position we do not feel that we are competent to make recommendations.

When the men get more education, and have some ambition to save their money for the benefit of their families, and treat those families as if they were really their own, the case will be better.

But as long as the State allows a parent to put his children into some reformatory institution simply because he is too lazy or shiftless to support him, that man will be ready to strike, or to commit any other breach of the peace. The State at present allows a man to shift his family responsibilities onto some one else too easily, and there is no home feeling. The home feeling must be encouraged by

all means in the power of the people, and everything possible must be done to preserve the family life in the country.

I did not start out with the idea of making a lecture, but perhaps you will wade through this, and I trust may get an idea.

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Dear Sir: We are in receipt of yours in regard to the labor question.

For some years we treated with our men through "shop committees," and were always in trouble. Fourteen years since we abandoned that practice, and since then have dealt with our men individually. They have prospered and seem entirely satisfied. The general objection to a shop committee we have found to be due to the fact that the members of it too frequently seem to feel that they are appointed by their fellow workmen for the special purpose of regulating the business of the company and to keep matters generally in a state of agitation, and that otherwise they would be held to be unenterprising.

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#### HARDWARE AND CASTINGS.

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Gentlemen: With reference to the matter of your favor of 24th December last that is, strikes and remedies for them, we remark that these works are conducted on a plan by which the employes so far as they decide to do so are owners of stock, that is, entitled to subscribe for stock, and therefore receive whatever dividends accrue, besides their wages. The percentage who have done this is comparatively small, say one in one hundred, even this small number seems to have the effect to establish a sentiment against any labor agitation, at least we are not troubled in that way to any serious extent.

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Dear Sir: In reply to your circular letter of December 24th in reference to the labor question, would say: We have two (2) plants. In one we gave a number of good workmen the earning capacity of



\$1,000 worth of stock of that company, with the understanding that they would leave from their wages an amount equal to the earning capacity of \$1,000, and in a few years they would own that \$1,000 worth of stock by purchase, and they did own it in the time specified, and have bought considerable more since then.

We find that plan worked satisfactorily, giving no more than the usual friction of stockholders, but it also demonstrated to the men in question that we treated them fairly, and did not eat up all the profits by large salaries, as the president of the company only received \$1,000 a year salary, and gave his services for a number of years gratis, in order to establish the business on a solid basis, which we have succeeded in doing, as everything is working in harmony, and we trust will continue to do so.

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### BOILER WORKS.

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Dear Sir: Replying to your favor of the 24th inst., requesting information concerning any plan which we have put into practice for the purpose of improving the conditions existing between ourselves and our employes, would say that, owing to the unsettled condition of labor, we have only endeavored to come into closer contact with our people than in the past.

We have no special plan, simply a general policy to have our men come to us and tell us frankly and plainly anything they have to say, and we endeavor to meet them on a fair and equitable basis.

We are members of the National Founders' Association of the United States, which organization has been, we believe, of very great benefit in adjusting differences between labor and capital in the foundry interests.

During the agitation this year among machinists for a nine hour working day, many of our older hands were persuaded, even against their will, to join in with such of our men as belonged to labor unions in asking for the nine hours. We talked the matter over plainly with them, giving them to understand that what we wanted was a certain amount of work during each day, and if they could turn out as much in the nine hours as they had been in the ten we would be very glad to grant their request, they assured us that this could and would be done, and it gives us pleasure to say that they have lived up to this promise.

We are interested and pleased to see the constantly increasing attention being paid to the adjustment of differences between labor and

capital, and are gratified in the belief that a great improvement is being made on these lines.

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### STOVES.

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Dear Sir: We beg to hand you herewith statement as near as we can give it to you for 1901.

We have had no necessity to meet strike conditions during the past year. The President of our company, inaugurated a co-operative plan for last year. The idea was that money actually earned by an employee became his capital, or investment, in our company, and whatever the dividend earning power of the company was, he received a like percentage on the amount of his actual earnings. The way we figured was to get our net profits, deduct the regular discount of two per cent. on the capital stock, and this would leave a net amount for distribution among the stockholders, they receiving their dividend on cash invested, and the employee receiving a dividend on the wages that he had actually earned in the year. The Company was not pledged to continue this arrangement, which was entirely voluntary, but do, however, expect to continue it this year.

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### AGRICULTURAL.

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Dear Sir: Your favor of the 24th received. Yes, the labor question is a vital one; it is agitating the public mind throughout the world.

The writer has been in business over forty-five years, commenced by learning the trade himself, which gave him a better knowledge of the workman's attitude of mind than he could have obtained by any other means. President Schwab's wonderful success in managing labor comes largely from the fact that he was once a laborer himself and worked with them. He knows that a business cannot be successfully and continuously conducted unless the managers have absolute control, and this absolute control is quite as essential to the well-being of labor as it is to capital, and the day I could not control the business that I conduct without interference from irresponsible



people from a distance who are not even acquainted with me or my business, I would close for all time.

Labor and capital are partners; antagonism is therefore as absurd as it is injurious, and the reduction and absurdum argument might be applied to strikes. As with other partnerships, each member of the firm must have his distinct department, and where one interferes with the other the best results do not follow.

As for plans for bringing about a better understanding would say that they were formulated about 1,870 years ago, in Christ's sermon on the mount. Simply treat your workmen as you would have them treat you under similar circumstances. In proportion as you do that and they become convinced that you are sincere, misunderstandings and grievances will vanish, and just in that proportion. There is no other safe rule. As I firmly believe that outside interference in the management of my business is as much against the interest of my workmen as my own, and since if we were in their place and they in ours I would feel about it the same way, we permit none. If there should be union men in the factory and they are ordered to strike, we only feel sorry for them—we treat them fairly and know they will not better themselves—are ready to give them testimonials to get work elsewhere and have them depart in peace, but would close the business forever before attempting a compromise which in the nature of things is impracticable. If all manufacturers would adopt this plan of course strikes would be at an end. We cannot recognize their right to interference in the management of our business, since they know nothing about it, and it would only make a mess of things and hurt them as much as it would us.

The labor question has never disturbed us particularly, since we have an abiding faith in the general underlying good sense of the American people, and feel quite sure in the long run that workmen and capitalists alike will recognize that they are in partnership, and therefore their interests are mutual, and that any antagonism is a breach both of good faith and good policy.

In conclusion would say, I most heartily and cordially endorse the New York convention and its plans. With such a personnel, good must come of it.

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#### TOOL WORKS.

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Dear Sir: Replying to your circular letter of the 24th inst., we beg to state that we have no particular plan for strike prevention in our establishment.

We always aim to treat our workmen as intelligent men and look

after their comfort and interests. In our twenty-eight years of existence we have never had a strike nor any intimation of one. The majority of our men have been with us all of these years.

The secret, if there be any, is in the treatment of workmen as men of intelligence.

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### SMELTING WORKS.

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Dear Sir: We are in receipt of your favor of the 24th inst, relative to our plan of strike prevention with our employes. In reply would say although we have been in business successfully over thirty years, we have never had a strike or any trouble whatever with our employees as an organized body. We employ from fifty to seventy-five men; we pay them the current rate of wages, and they seem perfectly satisfied.

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### ELECTRICAL.

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Dear Sir: Replying to your favor of the 24th, would say that the labor question is not one that has ever concerned us very seriously, in eighteen years we have never had a strike or any disagreement of any kind with our men. Our system has been to treat our men with fairness and pay as high wages as we consistently could. Where economy was necessary it has been our method to put more work and responsibility on our men at advanced wages rather than lower the scale of wages.

We are not able to make any suggestions as to the matter of conciliation beyond fair treatment of employees.

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### PRESSED AND FLINT GLASS.

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Dear Sir: Your circular letter in reference to the labor question came duly to hand, and we enclose you with this, a wage and move list, with rules and regulations of the Pressed Ware Department,

adopted by a joint committee of the National Association Pressed and Blown Glasswares and the American Flint Glass Workers Union. These rules were adopted in 1888 after a prolonged strike that lasted very nearly six months. The question at issue then between the manufacturers was the right to employ workmen who were not members of their union, and the unlimited production of glassware to be paid for piece work. This set of rules was the result of a prolonged struggle and was, in a measure, a compromise.

Since then there has been but a few strikes amongst this branch of the trade, which covers some ten branches or lists, including the making of chimneys, white liners for fruit jars, fruit jars, engraving, glass made in tanks, what is known as the Caster place list, which is a list covering a large variety of blown glass such as jars, fish globes, aquariums, and such line of goods, articles made in paste mould, shades and globes, articles made in iron mould, and pressed ware list which we send you. The numbers have varied some little since the original list, but the changes have invariably been to the benefit of the workers.

The exception to this was one strike, which took place in 1893, which was a serious one, and grew out of the fact that the workers refused to let non-union men work in the factories, and also refused to make more than a limited quantity of goods. The United States Glass Company of Pittsburgh issued a set of rules which they asked the workmen to agree to, which made the factories open factories in which any man could work whether he was a member of the union or not, and also provided that all work should be made piece work, and should work eight and one-half hours for a day's work, and make what they could during that time. This strike resulted in the defeat of the workers. The United States Glass Company after a long struggle, being able to operate their plants on the lines they proposed. With this exception the rules have been fairly well lived up to, but there have been short strikes owing to hot blood on both sides, but the manufacturers claim, and the workers too, that under Rule 10 there shall be no strike until the matter has been referred to the manufacturers' and workers' committee for settlement. This has worked to a very great advantage, and is insisted upon at the present time.

The great danger is from the unreasonable position taken by the workers at times in which they will not yield points which they know are absolutely right: For instance, some of these lists that are made could be made in one-half of the set time, and yet they are not willing to rectify them. The manufacturers' committee have time and again offered to yield on some points, provided they would yield on those unequal things, but it is impossible to get any concession from them that does not give them twice as much another way.

Labor organizations are all right, provided they are worked intelligently and do not interfere with the personal liberty of men not members of their organization.

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### CUT GLASS.

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Dear Sir: In reply to your question as to our method of handling labor difficulty we would say that it has been our policy to use our men just and fairly and pay them as well as business conditions will allow us, and any who are not satisfied with that treatment must look elsewhere for employment. In the case of the strike a year ago we fought it to a finish, the men coming back to work on our terms.

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### CIGARS.

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Dear Sir: Yours of the 24th inst. is received and in reply would say, that as we have always enjoyed the pleasantest relation with our employees, it has not been necessary for us to look into or plan any means of preventing a strike. We attribute this condition to the fact that we have always paid them good wages and given them considerate treatment, recognizing the fact that they are human and entitled to treatment as such by their employers.

Trusting this answers your inquiry satisfactorily, we are

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### CONTRACTORS.

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Dear Sir: In reference to your inquiry whether I had put in practice any plan for adjusting grievances or preventing or settling strikes. I have had a little experience along that line. Several years ago the Bricklayers International Union of this city made certain demands upon the contractors. There were committees ap-



pointed from both sides. (I was on committee of contractors), and after several meetings, we were unsuccessful in coming to an agreement, and finally agreed to leave the matter to an arbitrator for settlement, he to be chosen by both sides and to be neither an employer or employee. The difficulty was satisfactorily settled in this way, both sides had to concede some points. A contract was signed and the best of feeling prevailed on both sides.

In the fall of 1900, just after the great miners strike the men employed at my brick works thought they should receive a raise in their wages. There was no demand made, but some of them were agitating the matter and making the others dissatisfied so that there was considerable muttering and grumbling among them.

After thinking the matter over I invited them all to spend the evening with me at my house. I then explained to them that I had heard that some of them were dissatisfied with their pay, and that I was getting no more for my brick than I had been before, in fact had taken a contract quite low for the sake of keeping my plant running all winter, and could not afford to pay much more wages. I felt friendly to all of them as many of them had worked for me a long time. I did not want them to strike, as that might make hard feelings between us. If they wanted to quit and could get more pay they should do so and I would respect them for it. If they went to work the next day I would look into the matter and perhaps give some of them more pay. This was interpreted to the Hungarians and then we had some refreshments and other entertainments, took a photograph of the party and they went home pleased. Every man was at work the next day. I afterward raised the wages of some of them and have had no further trouble. The most of those men are still with me.

I think labor troubles should be settled if possible without strikes.

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### SILK.

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Dear Sir: In reference to the labor question about which you inquire, I don't know that any plan can be formulated to prevent strikes, or that any one method looking to that end could be fitted to all conditions. I have never had any plan nor have I ever needed one. I believe that all people no matter what their condition in life may be, or how extended or confined their opportunities, or what may be the measure of their intelligence beyond actual imbecility,

can be contentedly controlled when they once become convinced that they always are and always will be treated with absolute justice in all things—that justice will be meted out flavored with generosity for misfortunes and charity for faults. Any body of working people once saturated with the conviction that the employer is their just friend, ready to help in case of need, and prompt to rectify a wrong, will never have a grievance to justify a strike, nor can be readily moved to create an imaginary one.

Many strikes are unwarranted but very many come from a lack of sympathy between the employer and his help. A latent grasping disposition fosters in the minds of both, simply because there is no bond between them.

Of course on the basis of the simple proposition, that one man has labor to sell which the other buys, and that the seller gets as much as he can, and the buyer pays as little as he must, any other bond between them seems superfluous, but neither factories nor households can be happily or prosperously run on any such unsympathetic principle, and for permanence and contentment some such bond is needful.

I have never had a strike or any discontent, nor do I ever expect one. If I find that any of my work is from some unforeseen cause more difficult than calculated on, and does not afford the employe a fair average wage, I do not wait for a complaint but voluntarily increase the compensation. Of course this is not done at haphazard but judiciously.

Carried too far it might be fairly contended that this course would lead to imposition and insubordination. It need not be carried too far, it needs only the disposition to be just and fairly liberal. It needs also the iron hand in the silken glove always governed and controlled by a sincere desire to benefit and help those who under your supervision are honestly seeking their daily bread and benefiting you by their labor.

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### WOOLEN GOODS.

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My Dear Sir: Replying to your favor of December 24th in relation to the labor question, I beg to say that we have no plan with which to deal with our hands other than good treatment and a proper respect for all, and with our assurance to them, that we will pay them as much wages as any of our neighboring mills will, or do pay for the same character of work. In an experience of some forty years a manager for other plants and as proprietor, I have never yet had a strike.



### CARPETS.

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Gentlemen: Replying to your inquiry of December 24th in reference to "Plan of Strike Prevention," would say that nearly twenty years ago we had a strike in our mill, which lasted about eight months. It was a very costly affair for both the work people and ourselves, and we hope it taught us both a lesson. We have for many years since that time been in the habit of meeting a committee of our work people every six months, at the beginning of each season and before our prices are made for goods, at which time an agreement for prices of labor for the coming six months is established.

We find this plan works admirably. Neither the men nor ourselves have ever failed to strictly comply with the terms, and we have gotten along very amicably, and with mutual respect ever since.

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### HOSIERY.

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Dear Sir: In reply to your request as to how get along with my help, I would say that look on them as though they were my own people, use them with all kindness, but am firm in demanding what is right and expect them to do the best, and in return I give them the benefit of the quarter of a cent. I have no trouble.

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### PAPER BOXES.

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Dear Sir: In replying to yours of the 24th inst., regarding the labor question, beg to say we have never had a strike among our employes.

When grievances are brought up we give the matter careful consideration and by argument or concession on our part adjust the difficulty to the satisfaction of all concerned; therefore have never adopted any particular plan.

Trusting this answers fully your letter, we are

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### CORDAGE.

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Dear Sir: Your esteemed favor of 24th inst. was received, asking whether we had put into practice any plan that has proved successful in bringing about a better understanding with our employes.

We would state that we have never had any special plan, except

the one adopted by the late Edwin H. Fitler, and which we have strictly carried out, which was the broad, liberal policy of avoiding little squabbles, and, in dull times that we have had, treating our people liberally and not taking advantage of conditions.

We feel that these few moves have been the means of promoting a good feeling on the part of our employes and they, therefore, have stood by us in prosperous times.

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## BOOTS AND SHOES.

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We have a shoe manufacturers organization, composing all the principle manufacturers of the city. Our employes have an organization called the Central Convention of Shoe Workers. We have rules agreed upon by the two organizations. All disputes are referred to a joint board of arbitrators that meets semi-monthly, whose decisions are final. There can be no strike or lockouts. We have worked under this plan for fourteen years very satisfactorily to both parties. John G. Croxton has been President of the Shoe Manufacturers Association for thirteen years. George P. Schober is President of Joint Board of Arbitrators.

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## SHOES.

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Dear Sir: In reply to yours of the 24th, we will endeavor to answer the questions in our report as correctly as possible, and hope same will be plain to you.

In regard to our plan of preventing strikes, will say that for the past fifteen years the shoe manufacturers of Philadelphia have settled all difficulties by a joint board of arbitration, composed of nine manufacturers and nine workmen. All members of this board must be actively engaged in the manufacture of boots and shoes. This is the only qualification necessary. You can get further particulars of the workings of this joint board of arbitration from our secretary, Mr. Howard L. Townsend, P. O. Box, No. 510, Philadelphia. I know the secret of the successful working of our joint board of arbitration

is that we have always kept out all idlers, such as walking delegates who live on the troubles of their fellow men.

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Dear Sir: In regard to the labor question as relates to our business, would say that some years ago we were troubled with strikes, but later on organized a joint board of arbitration composed of manufacturers and shoe workers in equal numbers. In addition to this each of the factories has a shop organization. All of the working people in the said factory being obliged to become members. Whenever any grievance is presented that could not be settled between the shop's committee and the manufacturer, it is referred to the joint board of arbitration, and for a number of years they have been able to settle the same without calling in a disinterested person as they are entitled to in case of a tie.

The operation of this plan has been for the most part excellent. Only in one case has it failed. About two years ago our lasters struck in September in violation of our yearly contract which runs from December to December, and although they were ordered back to work by the allied shop's organization and unanimously by the joint board of arbitration, they refused to comply and it put us to some inconvenience for a while, but with that exception, the plan has worked admirably and as it works under regular rules which all understand, and as the ultimate decision rests as much with the working people as with the manufacturer, its fairness seems to suggest itself to all and results have been very satisfactory.

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Dear sir: In answer to this question will say that I think arbitration is the very best means to settle all labor disputes, and State authorities ought to appoint the arbitrators, or have them elected by the people of the State; also that the State pay the arbitrators. I have adopted the Boot and Shoe Union stamp, and signed their arbitration contract which I think good.

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## LEATHER.

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Dear Sir: Answering yours relative to the labor question, we are very glad to say we have had very little to concern us on this

score. There has never been a general strike in these works, some departments have made demands and some men have gone so far as to leave their work, and on one occasion only did one whole department, some 300 men, go out on strike. That question was settled by the introduction of machinery to do the work.

We have no definite plan "in bringing about a better understanding in adjusting grievances or in preventing or settling strikes," beyond the fact that all complaints and demands are promptly attended to and our people seem to be contented with their work.

We have here in flourishing condition a building and loan association; and also a beneficial association, as well also a well equipped social club house.

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Dear Sir: The labor question that is agitating the public mind is no doubt a hard problem, and while all of us have some opinion on it and have had to face the demand for increase of wages by individual or organized labor, there seems to be no general accepted principle that will apply to its solution. Personally I think the chief difficulty in the prevention of strikes comes from the head of business concerns, if the head of a business concern employing a thousand hands was active in gaining the personal acquaintance of everyone in his employ, and speak a kind word or merely nod an approval when deserved, or correct mildly if needed it would go a great way toward curtailing the power a labor leader exercises over his followers. The labor leader knows his strength with the organization lies in his ability to enter into personal contact with the men, and he does it. When an employer has the respect of his employes he has won half the battle, if it comes at all. This has been my own plan with men up to at the most 35 or 40, and has served me well; where this can be done I believe it is the best plan that can be taken to prevent or settle strikes.

In the case of large trusts the problem is more difficult, because even when the labor question is divided up, the fixing of wages left to the managers of the individual plant, an outbreak of dissatisfaction at one place effects all of them generally. The most reasonable plan, I think, is that suggested by President Roosevelt's message, that all trusts be required to give the fullest publicity of their affairs to the public. It will not only protect the public, but will influence the conduct of labor as well; because the affairs of the people they work for are guarded so close they become suspicious that a great deal is made out of their labor, whereas if they were fully acquainted with the facts as they really are, they would know different.



Dear Sir: Replying to your letter of December 24th, in reference to labor troubles would say that we have been very fortunate in this respect as we find the best way to settle a strike is not to have one.

We work all departments in squads with a foreman over each department; each department is expected to turn out so much every week at so much money. If men stay out in any department the other men must do their work and they then divide among themselves the pay of the men who stayed out. We find in this way that the men will watch each other and insist upon each man holding up his end. This system of course has some disadvantages but we find the advantages largely outnumber the disadvantages, as we are always able to tell exactly what our goods cost us, and our men are generally contented because under our system they can usually make more money than they can for like work in other factories.

Trusting this will be of advantage to you, we remain,

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#### THIS ADDITIONAL INFORMATION ASKED OF TANNERS.

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"We would be glad if you would accompany your return with a letter setting forth the changes that have occurred in the tanning industry during the past ten years; the improvements as well as the difficulties you have to contend with by way of depletion in the stock of bark, domestic hides, etc."

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#### TANNING.

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I believe that capital frequently is labor unjustly accumulated, and if the capital were more liberally distributed among laborers there would be fewer strikes. Laborers are often compelled to buy all of their necessities out of a shop kept by the very firm they are working for, and pay prices beyond any comparison with the wages they get for their labor. If we hire men I think they, without any pressure, should be allowed to buy where they please.

Now in regard to the supply of domestic hides, it is ample that trusts and corporations have so fixed the matter that the small

tanner has no show. The hides on account of the hide trusts are too high and what is equally bad is the manner in which they are taken off. There was a time when if we bought Chicago packer skins as No. 1, we got them. To-day 33 per cent. of them make only No. 2 leather. Now something must be done to remedy this evil. We do not use foreign hides. The supply of bark is becoming short; for this there is a reason; the forest or mountain fires destroy bark, but this is not the greatest source of future shortness; it is that the fires going through the forest hunts the young trees and they never make a good growth. I think there should be a law passed making all men candidates for the penitentiary who without cause save to destroy, set fire to the mountains.

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Dear Sir: In regards writing you about the tanning industry, would say, there have been lots of changes made in the past ten years and no doubt there will be as many more in the next ten years. Think all Pennsylvania tanners feel the scarcity of bark, and no doubt a good many are using extract, which shows good results to those who are familiar with using it. Think the hide situation would be greatly improved if the duty were removed, as the duty on hides helps the packers only, which are few in number, while shoe tanners, shoe manufacturers and the people who wear the shoes are the sufferers. In regard to the labor question, could not give you very much information in that line, as my experience in the tanning business for twenty years was always such that my employes never made a demand for increased wages, never threatened to strike, and always got along well together. I treat with each one individually when there is a grievance and never had to call the third party in to help settle the matter.

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Gentlemen: In the matter of tanning industries will say I find that rough leather tanning is on the decline and has been for the past ten years. Domestic hides have increased in price since the fifteen cent tariff on imported hides. The exporters of leather receive a rebate on all leather exported, they have an advantage over the small tanneries who only furnish home markets. I am told by leather dealers in Boston that they can sell leather for export less than for home market for the reason they get the rebate and at same time make a better margin. As to improvements in tanning. The fact that the large tanneries have adopted the plan of finishing the leather makes it bad for the small rough tanners, the large tanners can



deliver this leather to the shoe factories before we can get ours ready to ship in the rough. I tanned 2,250 foreign hides (Indian kip), and have the leather yet on hand. The fact that there is no tariff on the small hides caused market to be flooded with this kind of leather, and it now is a drug on market. As to the labor question in my opinion if all manufacturers and corporations would not employ any person other than who belong to the labor unions it would save all further trouble. The fact that capital is concentrating and making combinations makes it necessary for labor to be well organized and hold together and deal with capital as a whole. The majority of our laboring class are well posted and know the profits made by the corporations. To protect themselves they must act as a unit. In my experience I have attended labor meetings and always found an intelligent quiet and orderly gathering, all business conducted in a peaceable manner. I can't say the same of our United States Congress at Washington, but this is digressing. In my tannery business I have two men who have worked for me fifteen years each, and as you will see by my report have received small wages. They are satisfied however, they are well acquainted with my business and know it will not allow any more.

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Gentlemen: Yours of December 24th is received. Enclosed find the blank filled out as requested.

In reply to your inquiry as to the question of conciliation between employer and employes will say that I have never had the slightest difficulty or dispute with any of the men in my employ. They receive fair wages, are paid in cash weekly, and seem wholly satisfied. Each man seems to take an individual interest in the manufacture and production of stock. Under such circumstances there is no need of any particular plan of adjustment as we seem to understand each other at all times. The factory is kept running through good and bad times, and we believe if other manufacturers were in as close touch with their men as we are with ours there would be no labor troubles to speak of.

Regarding the other letter about tanners, will say in reference to the changes that have been made in the tannery industry during the past ten years, the improvements in machinery have been very great, lessening the cost of production. The increased knowledge acquired by tanners in extracting from their bark a much larger percentage of tannic acid has been a source of considerable saving in the quantity of bark used. The depletion of the stock of bark in the State had begun to be felt and shown in the rise in the price of bark. The

stock of bark particularly of hemlock is fast disappearing. As the price of bark increases, thus making the cost of leather higher, other tanning agents are sought for, and are being largely employed. This depletion of the bark supply will eventually drive a great many tanners from the State. My suggestion is in line with other numerous well informed men that this bark supply of the oak kind can be maintained in the State. There are now thousands upon thousands of acres of waste land in the State of no value whatever for farming or other purposes, and the State should take an interest in cultivating the reproduction of oak forests as suggested in the forestry meetings of those interested in this particular science. Of course this will not benefit any of the present generation but as the State is a permanent institution it will yield benefit hereafter. If these waste lands could be made reproductive of timber and bark, which it can be under proper direction, and under State supervision, in future years the timber supply which is now nearly exhausted, would be increased, and the bark supply maintained sufficient to operate many large tanneries.

It is a fact that tannin produced from bark at a cost of six, seven or eight dollars per ton is cheaper and better than any of the substitutes that have as yet been discovered, and it should be the duty of the State to maintain and encourage such laws as would reproduce the article mentioned.

Regarding hides there seems to be no particular diminution in their quantity as far as I am able to observe.

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Dear Sir: Yours of the 24th about strikes. We, like other similar industries, employing labor have threatened trouble occasionally, but we have had no real action. When our men become dissatisfied we at once ascertain the cause and if they are reasonable we try and make them happy, but if they are unreasonable, we try and locate the ones leading and drop them when opportunity occurs for cause. We have from 350 to 500 men employed, and as they are altogether, we do not deal with committees. Committees are generally made up of individuals who are born kickers, who will submit to nothing but their own way. Instead of committees, when we find the men dissatisfied, we single out the class having the grievance, call them together and tell them where we stand and in such language that each man can hear and understand for himself what we have to say, and not rely on what some one else says. In this way we find that the majority of the men are always reasonable, and we can hold them, although others may try to lead them into trouble. A committee seldom reports to its body the exact language or intent of the employer,

and we are fearful of being reported incorrectly, thus we prefer to state our case to the men as a whole, and to three men representing the whole. Of course in large corporations this is not practicable. Taken as a whole, we pay our men as high or higher wages than others in like business, and our men know this, and if they can do better elsewhere we either meet the conditions, or let them go. We anticipate no trouble during the coming year, as we now have a clear and distinct understanding with all our men.

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Dear Sir: In reply to your inquiry of December 24th will say that I retired from the tanning business July, 1900. Being you ask my experience in the labor question will give you a short sketch of my life.

In July, 1860, I was apprenticed for four years to a Mr. Vogel. Terms were, my father was to furnish the clothes, Mr. Vogel to furnish board, I to work without pay, and he was to teach me the art of tanning. While serving there I never received a cent for my labor, but one Christmas he gave me twenty-five cents. In 1865 I had full charge of my father's tannery, being then 19 years old, my father being a passive man and not caring about the cares of business just put the whole responsibility on my shoulders.

So you see I conducted business from 1865 until 1900, being a term of 35 years and in this time employed from 20 to 45 men, the last 15 years not less than 45.

I was always successful, never had a strike or dispute with my help, and I attribute it to the following rules. I never under any circumstances would give employment to a union man.

2d. I never asked any thing unreasonable from my men.

3d. I always treated my men as my equal in the tannery or out, in fact wherever we happened to meet.

I will mention one case which comes to my mind where the men thought I imposed on them, which we settled in the following manner:

I complained to my beam men that they were not doing work enough. They thought otherwise. They were hand fleshing sixty sides per day per man, I wanted eighty pieces.

So I pulled off my coat and showed them that I could do 160 pieces in 10 hours and then asked them if they were not ashamed of themselves, when only asked to do one-half what I could do? That settled that point. They got a new move on and it was only a few days before eighty pieces was an easy days work.



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ANALYSIS.

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Before entering up a review of the several statistical presentations contained in this report we desire to give a belated acknowledgment of the courtesies extended by Laird, Schober and Company, and The Harrisburg Boot and Shoe Company for the privilege of illustrations from their factories showing the process of shoe manufacture and of like courtesies extended by Geo. Watkinson & Co., showing the method of making rubber boots and shoes, and of courtesies shown by American Cement Company, in the privilege of illustrations of cement works and quarries. Also to acknowledge the courtesy of Lathbury and Spackman in allowing the reproduction of cuts showing modern crushers, testing machinery, etc., used in the manufacture of cement.

The first presentation of statistical tables will be found on page 83, Comparative Statistics of Manufactures, 1892 Series. As with 1901 the series ends, the natural inquiry would be, what has it shown—what has it accomplished? In considering this question it must be borne in mind that the 354 establishments represented by the 44 industries are the same establishments throughout the ten years, 1892 to 1901, inclusive. If a sufficient number of representative plants are considered in each industry, the work must have interest as portraying general business conditions, particularly in helping the mind to conclusions that without data would be formless and shapeless. History, if correct and impartial, is of value. Statistics, even in the form of a chronology if possessing like virtue must have like comparative value. Marked changes have taken place in the industrial world during these ten years. The series was established in 1892 with prosperity, dropped into adverse conditions in 1893, 1894 and 1895; its closing years however were marked by an era of prosperity for a number of the industries without a parallel in the history of the country.

The tables presented in this series from year to year show, with much accuracy, the effect that the varied conditions have had upon the respective industries. The exception, however, to this will be found in such industries as have been reduced to too small a number of establishments to be representative. The occasion of the reduction has been the retirement from business, failures, or possibly com-



bined ownerships, the combining with establishments not considered in this series and in consequence separation being impracticable. In several instances this work of depletion has resulted in but a single establishment being left to represent the industry.

We submit herewith tables of comparison, 1901 with 1894, showing the comparative condition of wage earners. While 1894 has been taken as the year of the greatest depression, some of the industries considered were more seriously affected in 1893, or perhaps in 1895. In making comparison the single establishment industries have been eliminated, leaving but forty-one of the forty-four industries represented in the 1892 Series to be considered in this work of retrospection.



COMPARISON OF VALUE OF PRODUCTION BY THE SAME ESTABLISHMENTS FOR THE YEARS ENDING 1894 AND 1901, AS DEDUCTED FROM THE 1892 SERIES.

Character of Industry and Years.	Number of establishments considered.	Value of production.	Increase(+) or decrease (—) 1894 as compared with 1901.	Per cent- age of in- crease(+) or de- crease (—).
PIG IRON.				
1894, .....	13	\$5,580,847	\$	
1901, .....	13	13,645,721	+8,064,874	+114.5
ROLLING MILLS—GENERAL PRODUCTS.				
1894, .....	32	72,055,767	.....	.....
1901, .....	32	196,936,504	+124,880,737	+173.3
SHEETS AND PLATES.				
1894, .....	14	7,798,069	.....	.....
1901, .....	14	28,209,826	+20,411,757	+262.7
PLATE AND BAR.				
1894, .....	3	2,505,387	.....	.....
1901, .....	3	4,246,894	+1,741,507	+69.5
STEEL.				
1894, .....	13	15,781,892	.....	.....
1901, .....	13	37,692,910	+21,911,018	+138.8
ARCHITECTURAL CAST AND WROUGHT IRON WORK.				
1894, .....	4	1,407,416	.....	.....
1901, .....	4	7,210,281	+5,802,865	+412.3
IRON FORGING.				
1894, .....	4	604,106	.....	.....
1901, .....	4	1,127,833	+523,728	+86.7
NAILS AND SPIKES.				
1894, .....	10	3,275,789	.....	.....
1901, .....	10	3,036,702	—239,087	—7.3

## VALUE OF PRODUCTION—Continued.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of production.	Increase(+) or decrease (—) 1894 as compared with 1901.	Per cent- age of in- crease(+) or de- crease (—).
NUTS AND BOLTS.				
1894, .....	2	\$844,782	\$	
1901, .....	2	2,184,110	+1,339,328	+158.5
PIPES AND TUBES.				
1894, .....	4	1,927,748	.....	.....
1901, .....	4	6,052,557	+4,124,809	+214.0
HARDWARE.				
1894, .....	4	1,040,023	.....	.....
1901, .....	4	1,928,480	+888,457	+85.4
MALLEABLE IRON.				
1894, .....	2	296,371	.....	.....
1901, .....	2	860,568	+564,197	+190.4
SAWS, EDGE TOOLS, ETC.				
1894, .....	5	2,402,820	.....	.....
1901, .....	5	5,095,464	+2,692,644	+112.1
METAL AND METALLIC GOODS.				
1894, .....	8	2,060,465	.....	.....
1901, .....	8	2,785,309	+724,844	+35.2
LOCOMOTIVES AND ENGINES.				
1894, .....	14	9,629,617	.....	.....
1901, .....	14	37,028,910	+27,399,293	+288.5
ENGINES AND BOILERS.				
1894, .....	6	1,625,120	.....	.....
1901, .....	6	3,392,325	+1,767,205	+108.7

## VALUE OF PRODUCTION—Continued.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Value of production.	Increase(+) or decrease (—) 1894 as compared with 1901.	Per cent- age of in- crease(+) or de- crease (—).
BOILERS.				
1894, .....	7	\$1,046,140	\$	
1901, .....	7	1,885,929	+839,789	+80.3
BRIDGES.				
1894, .....	4	1,292,171	.....	.....
1901, .....	4	3,575,000	+2,282,829	+176.7
CAR SPRINGS.				
1894, .....	1	331,010	.....	.....
1901, .....	1	1,070,693	+793 683	+223.5
CAR COUPLERS.				
1894, .....	1	510,732	.....	.....
1901, .....	1	1,052,300	+541,568	+106.0
CARS AND CAR WHEELS.				
1894, .....	8	4,090,667	.....	.....
1901, .....	8	5,739,513	+1,648,846	+40.3
WINDOW GLASS, BOTTLE AND TABLE GOODS.				
1894, .....	17	4,620,213	.....	.....
1901, .....	17	5,204,192	+583,979	+12.6
SHIP BUILDING.				
1894, .....	1	506,192	.....	.....
1901, .....	1	1,170,750	+664,558	+131.3
PIANOS AND ORGANS.				
1894, .....	2	139,818	.....	.....
1901, .....	2	211,177	+71,359	+51.0
RUBBER BOOTS AND SHOES.				
1894, .....	1	711,056	.....	.....
1901, .....	1	941,933	+230,877	+32.5

## VALUE OF PRODUCTION—Continued.

Character of Industry and Years.	Number of establishments considered.	Value of production.	Increase(+) or decrease (—) 1894 as compared with 1901.	Per cent-age of in-crease(+) or de-crease (—).
CARBONS.				
1894, .....	1	\$85,000	\$	
1901, .....	1	60,846	—24,154	—28.4
CARPETS.				
1894, .....	24	8,222,838	.....	.....
1901, .....	24	9,718,688	+1,495,850	+18.2
WOOLEN YARNS.				
1894, .....	10	1,999,184	.....	.....
1901, .....	10	4,781,637	+2,782,453	+139.2
COTTON YARNS.				
1894, .....	3	438,901	.....	.....
1901, .....	3	479,046	+40,145	+9.1
WOOLESTED YARNS.				
1894, .....	3	1,031,841	.....	.....
1901, .....	3	1,419,743	+387,902	+37.6
MISCELLANEOUS YARNS.				
1894, .....	9	764,435	.....	.....
1901, .....	9	1,025,967	+261,532	+34.2
WOOLEN GOODS.				
1894, .....	16	5,946,052	.....	.....
1901, .....	16	7,845,888	+1,899,836	+31.9
COTTON GOODS.				
1894, .....	17	7,171,910	.....	.....
1901, .....	17	8,250,689	+1,078,779	+15.4
COTTON AND WOOLEN GOODS.				
1894, .....	12	1,408,290	.....	.....
1901, .....	12	1,640,565	+232,275	+16.5

## VALUE OF PRODUCTION—Concluded.

Character of Industry and Years	Number of es- tablish- ments consid- ered.	Value of production.	Increase(+) or decrease (—) 1894 as compared with 1901.	Per cent- age of in- crease(+) or de- crease (—).
WORSTED GOODS.				
1894, .....	3	\$754,032	\$	
1901, .....	3	929,687	+175,655	+23.3
KNIF GOODS.				
1894, .....	5	812,353	.....	.....
1901, .....	5	973,529	+161,176	+19.8
CHENILLE GOODS.				
1894, .....	5	1,639,750	.....	.....
1901, .....	5	2,105,386	+465,636	+28.4
MIXED TEXTILES.				
1894, .....	9	2,458,285	.....	.....
1901, .....	9	2,736,137	+277,852	+10.9
TAPESTRY AND TABLE COVERS.				
1894, .....	3	309,906	.....	.....
1901, .....	3	457,030	+147,124	+47.5
HOSIERY.				
1894, .....	13	2,090,722	.....	.....
1901, .....	13	2,558,590	+467,868	+22.4
HOSIERY AND KNIT GOODS.				
1894, .....	3	677,810	.....	.....
1901, .....	3	596,327	—81,483	—12.0
SILK BROAD GOODS.				
1894, .....	4	2,624,564	.....	.....
1901, .....	4	4,948,756	+2,324,192	+88.5

COMPARISON OF NUMBER OF PERSONS EMPLOYED IN THE  
SAME ESTABLISHMENTS FOR THE YEARS ENDING 1894  
AND 1901, AS DEDUCTED FROM THE 1892 SERIES.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Number of persons employed.	Increase(+) or decrease (—) 1894 as compared with 1901.	Per cent- age of in- crease(+) or de- crease (—).
PIG IRON.				
1901, .....	13	2,459	+708	+40.4
ROLLING MILLS—GENERAL PRODUCTS.				
1894, .....	32	30,120	.....	.....
1901, .....	32	38,724	+8,604	+22.2
SHEETS AND PLATES.				
1894, .....	14	4,294	.....	.....
1901, .....	14	9,456	+5,162	+120.2
PLATE AND BAR.				
1894, .....	3	1,735	.....	.....
1901, .....	3	1,595	—140	—8.1
STEEL.				
1894, .....	13	9,778	.....	.....
1901, .....	13	17,480	+7,702	+78.8
ARCHITECTURAL CAST AND WROUGHT IRON WORK.				
1894, .....	4	976	.....	.....
1901, .....	4	2,601	+1,625	+166.5
IRON FORGING.				
1894, .....	4	469	.....	.....
1901, .....	4	160	—309	—65.9
NAILS AND SPIKES.				
1894, .....	10	2,305	.....	.....
1901, .....	10	1,607	—698	—30.3



## NUMBER OF PERSONS EMPLOYED—Continued.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Number of persons employed.	Increase (+) or decrease (—) 1894 as compared with 1901.	Per cent- age of in- crease (+) or de- crease (—).
NUTS AND BOLTS.				
1894, .....	2	560	.....	.....
1901, .....	2	1,021	+561	+100.2
PIPES AND TUBES.				
1894, .....	4	1,263	.....	.....
1901, .....	4	2,364	+1,101	+87.2
FOUNDRIES AND MACHINE SHOPS.				
1894, .....	25	2,603	.....	.....
1901, .....	25	4,477	+1,874	+72.0
STOVES, RANGES, HEATERS, ETC.				
1894, .....	9	1,238	.....	.....
1901, .....	9	1,324	+86	+7.0
HARDWARE.				
1894, .....	4	1,464	.....	.....
1901, .....	4	1,751	+287	+19.6
MAILEABLE IRON.				
1894, .....	2	293	.....	.....
1901, .....	2	799	+506	+172.7
SAWS, EDGE TOOLS, ETC.				
1894, .....	5	1,965	.....	.....
1901, .....	5	3,360	+1,395	+71.0
METAL AND METALLIC GOODS.				
1894, .....	8	1,500	.....	.....
1901, .....	8	1,622	+122	+8.1
LOCOMOTIVES AND ENGINES.				
1894, .....	14	8,441	.....	.....
1901, .....	14	19,058	+10,617	+125.8

## NUMBER OF PERSONS EMPLOYED—Continued.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Number of persons employed.	Increase(+) or decrease (—) 1894 as compared with 1901.	Per cent- age of in- crease(+) or de- crease (—).
ENGINES AND BOILERS.				
1894, .....	6	992	.....	.....
1901, .....	6	1,701	+709	+70.5
BOILERS.				
1894, .....	7	691	.....	.....
1901, .....	7	708	+17	+2.5
BRIDGES.				
1894, .....	4	647	.....	.....
1901, .....	4	1,459	+812	+125.5
CARS AND CAR WHEELS.				
1894, .....	8	2,830	.....	.....
1901, .....	8	3,334	+504	+17.8
WINDOW GLASS, BOTTLE AND TABLE GOODS.				
1894, .....	17	5,152	.....	.....
1901, .....	17	5,367	+215	+4.2
PIANOS AND ORGANS.				
1894, .....	2	162	.....	.....
190, .....	2	171	+9	+5.5
CARPETS.				
1894, .....	24	5,326	.....	.....
1901, .....	24	5,956	+630	+11.8
WOOLEN YARNS.				
1894, .....	10	1,148	.....	.....
1901, .....	10	1,959	+811	+70.6
COTTON YARNS.				
1894, .....	3	270	.....	.....
1901, .....	3	257	—13	—4.8

## NUMBER OF PERSONS EMPLOYED—Continued.

Character of Industry and Year	Number of es- tablish- ments consid- ered.	Number of persons employed.	increase (+) or decrease (—) 1894 as compared with 1901.	Per cent- age of in- crease (+) or de- crease (—).
WORSTED YARNS.				
1894, .....	3	722	.....	.....
1901, .....	3	849	+127	+17.6
MISCELLANEOUS YARNS.				
1894, .....	9	418	.....	.....
1901, .....	9	381	—37	—8.8
WOOLEN GOODS.				
1894, .....	16	4,856	.....	.....
1901, .....	16	4,544	—312	—6.4
COTTON GOODS.				
1894, .....	17	3,687	.....	.....
1901, .....	17	3,850	+163	+4.4
COTTON AND WOOLEN GOODS.				
1894, .....	12	1,248	.....	.....
1901, .....	12	1,165	—83	—6.6
WORSTED GOODS.				
1894, .....	3	461	.....	.....
1901, .....	3	416	—45	—9.8
KNIT GOODS.				
1894, .....	5	807	.....	.....
1901, .....	5	1,064	+257	+31.8
CHENILLE GOODS.				
1894, .....	5	1,176	.....	.....
1901, .....	5	1,492	+316	+26.9
MIXED TEXTILES.				
1894, .....	9	1,847	.....	.....
1901, .....	9	2,644	+797	+43.2

## NUMBER OF PERSONS EMPLOYED—Concluded.

Character of Industry and Years	Number of es- tablish- ments consid- ered.	Number of persons employed.	Increase(+) or decrease (—) 1894 as compared with 1901.	Per cent- age of in- crease(+) or de- crease (—).
TAPESTRY AND TABLE COVERS.				
1894, .....	3	229	.....	.....
1901, .....	3	316	+87	+38.0
HOSIERY.				
1894, .....	13	2,589	.....	.....
1901, .....	13	2,900	+311	+12.0
HOSIERY AND KNIT GOODS.				
1894, .....	3	600	.....	.....
1901, .....	3	478	—122	—20.3
SILK BROAD GOODS.				
1894, .....	4	1,446	.....	.....
1901, .....	4	3,285	+1,739	+120.3

COMPARISON OF YEARLY EARNINGS IN THE SAME ESTABLISHMENTS FOR THE YEARS ENDING 1894 AND 1901, AS DEDUCTED FROM THE 1892 SERIES.

Character of Industry and Years.	Number of establishments considered.	Yearly earnings.	Increase(+) or decrease (—) 1894 as compared with 1901.	Per cent- age of in- crease(+) or de- crease (—).
PIG IRON.				
1894, .....	13	\$382 09	\$	
1901, .....	13	576 72	+194 64	+50.9
ROLLING MILLS—GENERAL PRODUCTS.				
1894, .....	32	482 65	.....	.....
1901, .....	32	692 10	+209 45	+43.4
SHEETS AND PLATES.				
1894, .....	14	524 31	.....	.....
1901, .....	14	577 28	+52 97	+10.1
PLATE AND BAR.				
1894, .....	3	401 71	.....	.....
1901, .....	3	641 12	+239 41	+59.6
STEEL.				
1894, .....	13	459 41	.....	.....
1901, .....	13	555 94	+96 53	+21.0
ARCHITECTURAL CAST AND WROUGHT IRON WORK.				
1894, .....	4	500 19	.....	.....
1901, .....	4	541 36	+41 17	+8.2
IRON FORGING.				
1894, .....	4	506 31	.....	.....
1901, .....	4	740 47	+234 16	+46.2
CUT NAILS AND SPIKES.				
1894, ..	10	334 21	.....	.....
1901, .....	10	443 11	+108 90	+32.6

## YEARLY EARNINGS—Continued.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Yearly earnings.	Increase(+) or decrease (—) 1894 as compared with 1901.	Per cent- age of in- crease(+) or de- crease (—).
NUTS AND BOLTS.				
1894, .....	2	\$372 95	\$	
1901, .....	2	406 38	+33 43	+8.9
PIPES AND TUBES.				
1894, .....	4	406 38	.....	.....
1901, .....	4	521 14	+114 76	+28.9
FOUNDRIES AND MACHINE SHOPS.				
1894, .....	25	504 53	.....	.....
1901, .....	25	567 43	+62 90	+12.4
STOVES, RANGES, HEATERS, ETC.				
1894, .....	9	425 06	.....	.....
1901, .....	9	501 31	+76 25	+17.9
HARDWARE.				
1894, .....	4	337 79	.....	.....
1901, .....	4	398 70	+60 91	+18.0
MALLEABLE IRON.				
1894, .....	2	442 44	.....	.....
1901, .....	2	553 05	+110 61	+25.0
SAWS, EDGED TOOLS, ETC.				
1894, .....	5	444 05	.....	.....
1901, .....	5	527 39	+83 34	+18.8
METAL AND METALLIC GOODS.				
1894, .....	8	450 35	.....	.....
1901, .....	8	508 46	+58 11	+12.9
LOCOMOTIVES AND ENGINES.				
1894, .....	14	477 72	.....	.....
1901, .....	14	625 99	+148 27	+31.0



YEARLY EARNINGS—Continued.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Yearly earnings.	Increase(+) or decrease (—) 1894 as compared with 1901.	Per cent- age of in- crease(+) or de- crease (—).
ENGINES AND BOILERS.				
1894, .....	6	\$528 49	\$	
1901, .....	6	530 96	+2 47	+0.4
BOILERS.				
1894, .....	7	319 23	.....	.....
1901, .....	7	484 35	+165 12	+51.7
BRIDGES.				
1894, .....	4	405 31	.....	.....
1901, .....	4	553 43	+148 12	+36.5
CARS AND CAR WHEELS.				
1894, .....	8	456 65	.....	.....
1901, .....	8	564 10	+107 55	+23.5
WINDOW GLASS, BOTTLE AND TABLE GOODS.				
1894, .....	17	430 73	.....	.....
1901, .....	17	460 45	+29 72	+6.9
PIANOS AND ORGANS.				
1894, .....	2	285 10	.....	.....
1901, .....	2	437 73	+152 63	+53.5
CARPETS.				
1894, .....	24	355 30	.....	.....
1901, .....	24	389 71	+34 41	+9.7
WOOLEN YARNS.				
1894, .....	10	249 61	.....	.....
1901, .....	10	311 60	+61 99	+24.8
COTTON YARNS.				
1894, .....	3	262 90	.....	.....
1901, .....	3	343 03	+80 13	+30.5

## YEARLY EARNINGS—Continued.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Yearly earnings.	Increase(+) or decrease (—) 1894 as compared with 1901.	Per cent- age of in- crease(+) or de- crease (—).
WORSTED YARNS.				
1894, .....	3	\$279 20	\$	
1901, .....	3	281 07	+1 87	+0.7
MISCELLANEOUS YARNS.				
1894, .....	9	330 31	.....	.....
1901, .....	9	411 02	+80 71	+24.4
WOOLEN GOODS.				
1894, .....	16	286 00	.....	.....
1901, .....	16	354 35	+68 35	+23.9
COTTON GOODS.				
1894, .....	17	317 75	.....	.....
1901, .....	17	352 53	+34 78	+10.9
COTTON AND WOOLEN GOODS.				
1894, .....	12	290 19	.....	.....
1901, .....	12	310 79	+20 60	+7.0
WORSTED GOODS.				
1894, .....	3	344 35	.....	.....
1901, .....	3	417 86	+73 51	+21.3
KNIT GOODS.				
1894, .....	5	254 93	.....	.....
1901, .....	5	230 87	—24 06	—9.4
CHENILLE GOODS.				
1894, .....	5	376 55	.....	.....
1901, .....	5	419 50	+42 95	+11.4
MIXED TEXTILES.				
1894, .....	9	287 86	.....	.....
1901, .....	9	313 92	+26 06	+9.0

## YEARLY EARNINGS—Concluded.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Yearly earnings.	Increase (+) or decrease (—) 1894 as compared with 1901.	Per cent- age of in- crease (+) or de- crease (—).
TAPESTRY AND TABLE COVERS.				
1894, .....	3	\$400 53	\$	
1901, .....	3	426 34	+25 81	+6.4
HOSIERY.				
1894, .....	13	219 16	.....	.....
1901, .....	13	273 62	+54 46	+24.8
HOSIERY AND KNIT GOODS.				
1894, .....	3	319 67	.....	.....
1901, .....	3	309 32	—10 35	—3.2
SILK BROAD GOODS.				
1894, .....	4	250 43	.....	.....
1901, .....	4	231 76	—18 67	—7.5

COMPARISON OF DAILY WAGE IN THE SAME ESTABLISHMENTS FOR THE YEARS ENDING 1894 AND 1901, AS DEDUCTED FROM THE 1892 SERIES.

Character of Industry and Years.	Number of establishments considered.	Daily wage.	Increase(+) or decrease (—) 1894 as compared with 1901.	Per cent- age of in- crease(+) or de- crease (—).
PIG IRON.				
1894, .....	13	\$1 26	Cts.	
1901, .....	13	1 71	+45	+35.7
ROLLING MILLS—GENERAL PRODUCT.				
1894, .....	32	1 61	.....	.....
1901, .....	32	2 19	+58	+36.0
SHEETS AND PLATES.				
1894, .....	14	1 97	.....	.....
1901, .....	14	2 08	+11	+5.6
PLATE AND BAR.				
1894, .....	3	1 75	.....	.....
1901, .....	3	2 20	+47	+57.1
STEEL.				
1894, .....	13	1 69	.....	.....
1901, .....	13	1 88	+19	+11.2
ARCHITECTURAL CAST AND WROUGHT IRON WORK.				
1894, .....	4	1 63	.....	.....
1901, .....	4	1 77	+14	+8.6
IRON FORGING.				
1894, .....	4	1 71	.....	.....
1901, .....	4	2 51	+80	+16.5
CUT NAILS AND SPIKES.				
1894, .....	10	1 47	.....	.....
1901, .....	10	1 67	+20	+13.6

## DAILY WAGE—Continued.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Daily wage.	Increase(+) or decrease (—) 1894 as compared with 1901.	Per cent- age of in- crease(+) or de- crease (—).
NUTS AND BOLTS.				
1894, .....	2	\$1 30	Cts.	
1901, .....	2	1 42	+12	+9.2
PIPES AND TUBES.				
1894, .....	4	1 52	.....	.....
1901, .....	4	1 72	+20	+13.1
FOUNDRIES AND MACHINE SHOPS.				
1894, .....	25	1 79	.....	.....
1901, .....	25	1 87	+08	+4.5
STOVES, RANGES, HEATERS, ETC.				
1894, .....	9	2 02	.....	.....
1901, .....	9	2 14	+12	+5.9
HARDWARE.				
1894, .....	4	1 65	.....	.....
1901, .....	4	1 36	—29	—17.6
MALLEABLE IRON.				
1894, .....	2	1 79	.....	.....
1901, .....	2	1 83	+04	+2.2
SAWS, EDGED TOOLS, ETC.				
1894, .....	5	1 55	.....	.....
1901, .....	5	1 75	+20	+12.9
METAL AND METALLIC GOODS.				
1894, .....	8	1 57	.....	.....
1901, .....	8	1 56	—01	—0.6
LOCOMOTIVES AND ENGINES.				
1894, .....	14	1 79	.....	.....
1901, .....	14	2 06	+27	+15.1

## DAILY WAGE—Continued.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Daily wage.	Increase(+) or decrease (—) 1894 as compared with 1901.	Per cent- age of in- crease(+) or de- crease (—).
ENGINES AND BOILERS.				
1894, .....	6	\$1 77	Cts.	
1901, .....	6	1 76	—01	—0.6
BOILERS.				
1894, .....	7	1 45	.....	.....
1901, .....	7	1 57	+12	+8.3
BRIDGES.				
1894, .....	4	1 33	.....	.....
1901, .....	4	1 79	+46	+34.6
CARS AND CAR WHEELS.				
1894, .....	8	1 75	.....	.....
1901, .....	8	1 85	+10	+5.7
WINDOW GLASS, BOTTLE AND TABLE GOODS.				
1894, .....	17	1 65	.....	.....
1901, .....	17	1 96	+31	+19.3
PIANOS AND ORGANS.				
1894, .....	2	1 10	.....	.....
1901, .....	2	1 46	+36	+32.7
CARPETS.				
1894, .....	24	1 37	.....	.....
1901, .....	24	1 34	—03	—0.2
WOOLEN YARNS.				
1894, .....	10	90	.....	.....
1901, .....	10	1 05	+15	+16.6
COTTON YARNS.				
1894, .....	3	1 01	.....	.....
1901, .....	3	1 19	+18	+17.8



## DAILY WAGE—Continued.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Daily wage	Increase(+) or decrease (—) 1894 as compared with 1901.	Per cent- age of in- crease(+) or de- crease (—).
WORSTED YARNS.				
1894, .....	3	\$1 01	Cts.	
1901, .....	3	95	—06	—0.6
MISCELLANEOUS YARNS.				
1894, .....	9	1 26	.....	.....
1901, .....	9	1 42	+16	+12.7
WOOLEN GOODS.				
1894, .....	16	1 03	.....	.....
1901, .....	16	1 72	+69	+67.0
COTTON GOODS.				
1894, .....	17	1 29	.....	.....
1901, .....	17	1 25	—04	—0.3
COTTON AND WOOLEN GOODS.				
1894, .....	12	1 12	.....	.....
1901, .....	12	1 18	+06	+5.3
WORSTED GOODS.				
1894, .....	3	1 45	.....	.....
1901, .....	3	1 65	+20	+13.8
KNIT GOODS.				
1894, .....	5	1 00	.....	.....
1901, .....	5	90	—10	—10.0
CHENILLE GOODS.				
1894, .....	5	1 26	.....	.....
1901, .....	5	1 49	+23	+18.2
MIXED TEXTILES.				
1894, .....	9	1 00	.....	.....
1901, .....	9	1 08	+08	+8.0

## DAILY WAGE—Concluded.

Character of Industry and Years.	Number of es- tablish- ments consid- ered.	Daily wage.	Increase(+) or decrease (—) 1894 as compared with 1901.	Per cent- age of in- crease(+) or de- crease (—).
TAPESTRY AND TABLE COVERS.				
1894, .....	3	\$1 33	Cts.	
1901, .....	3	1 54	+21	+15 8
HOSIERY.				
1894, .....	13	80	.....	.....
1901, .....	13	94	+14	+17.5
HOSIERY AND KNIT GOODS.				
1894, .....	3	1 07	.....	.....
1901, .....	3	1 04	—03	—2.8
SILK BROAD GOODS.				
1894, .....	4	86	.....	.....
1901, .....	4	86	.....	.....

It will be observed from this presentation that increases were shown in yearly earnings in all but three of the industries, and in some cases an increase of a very marked nature, the range being as high as fifty-nine per cent. Thirty-two of the industries show increases in the number of wage earners. In some the increase is most pronounced, reaching as high as 172 per cent. The increase in daily wage, as is well understood, does not necessarily follow the increase in yearly earnings, as the daily wage may remain the same and the yearly earnings show a very large increase, the increase resulting from increased days of employment. However, it will be noted that thirty-two of the forty-one industries show increases in average daily wage, the increase ranging from four cents to eighty cents, and that eight show a decrease, the decrease ranging from one cent to twenty-nine cents. And it will be noted that aside from this twenty-nine cents of a decrease, no other decrease exceeded ten cents. In one industry the average daily wage remained unchanged.

It might be well to observe that the thirteen pig iron plants used in this series are not, as to the question of wages, representative of the pig iron industry of the State. The unusual production of pig iron in the western part of the State for the past few years where pig iron wages, for reasons, are higher than in the eastern part of the State, accounts largely for this difference. While these thirteen establishments only show an average daily wage of \$1.71, it will be observed in the presentation on other pages of the report showing the entire production of pig iron of the State, that the average was \$1.85. However, for comparative purposes the presentation has not thereby lost its virtue.

Comparison of totals of all establishments in this series for the entire ten years will be found on page 259. It will be observed that the total number of wage earners employed in 1901 was 156,424 as against 109,383 in 1894, an increase of 47,041 or forty-three per cent., and that 19,542 more wage earners were employed in 1901, at the close of the series, than were employed in 1892, at its beginning, an increase over that prosperous year of fourteen per cent. The aggregate wages paid out in 1901 was \$85,219,969 as against \$45,229,667 in 1894, an increase of \$39,990,302 or over eighty-eight per cent, and an increase over 1892 of \$17,888,093, or over twenty-six per cent. The average yearly earnings were \$544.80 in 1901 as against \$413.50 in 1894, an increase of \$131.30, or nearly thirty-two per cent, and an increase over 1892 of \$52.90 or nearly 11 per cent.

#### VALUE OF PRODUCTION.

On page 260 comparison is made of values for the ten years. The value of the production for 1901 is shown to have been \$432,994,653

as against \$185,626,971 in 1894, an increase of \$247,367,682 or 133 per cent, and an increase over 1892 of \$163,542,188 or over 60 per cent.

### 1896 COMPARATIVE SERIES.

The presentation of this series commences with page 261. As the series was established in 1896 it has four years yet to run. More details are set forth than in the 1892 series, the important additions being capital invested and cost of the basic materials. At the same time more attention is paid to the production. Where the output is in such form as to admit of comparison, return is secured and the comparison made. The presentation in this series consists of eighty-eight industries, representing 801 establishments, and like the 1892 series comparison is made with the same establishments. There having been no year of depression since 1896, marked changes in prosperity and adversity cannot be shown as set forth in deductions from the 1892 series.

It is, however, of interest to note that seventy-three of the eighty-eight industries show increases in yearly earnings 1901 over 1896. The following tables are submitted showing these increases, and the decreases in the remaining fifteen industries, together with a presentation of the number of wage earners immediately affected thereby.

THE 73 INDUSTRIES SHOWING INCREASES IN YEARLY EARNINGS 1901 OVER 1896, TOGETHER WITH THE NUMBER OF WAGE-EARNERS IMMEDIATELY AFFECTED THEREBY AS DEDUCTED FROM THE 1896 COMPARATIVE SERIES.

Industries.	Number of wage-earners in 1901.	Increase in yearly earn- ings 1901 over 1896.
Billets, slabs, blooms, etc., .....	1,838	\$321 31
Tool steel, .....	167	235 36
Chenille goods, .....	680	171 37
Metal and metallic goods, .....	252	161 37
Wire nails and rivets, .....	255	133 29
Locomotives and cars built and repaired,	7,498	127 14
Saws, .....	57	123 97
Car springs, axles and railway supplies, ..	9,737	104 93
Wall paper, .....	371	102 66
Carpets, .....	2,801	101 35
Iron chains, .....	288	99 59
Slate roofing, etc., tonnage, .....	907	95 54
Foundries and machine shops, .....	3,622	95 11
Wrought iron pipes and tubes, .....	6,574	94 46
Shovels, spades, scoops, etc., .....	592	89 19
Glazed and chrome kid, .....	4,783	88 26
Wrenches, picks, etc., .....	357	84 36
Book binding, .....	188	80 99
Stoves, heaters, ranges, etc., .....	3,773	80 42
Woolen and worsted yarns, .....	1,658	79 78
Fur and felt hats, .....	2,060	76 05
Slate roofing, etc., squares, .....	1,578	73 27
Window glass, bottles and table goods, ..	8,820	71 90
Brass, copper and bronze goods, .....	1,760	70 37
Agricultural implements, .....	1,594	68 37
Electrical supplies, .....	7,212	66 00
Cast iron pipe, .....	841	65 75
Upholstery goods, .....	2,216	64 76
Locomotives, stationary engines, etc., ....	13,298	63 74
Woolen and worsted fabrics, .....	3,294	62 42
Iron and steel bridges, .....	2,076	62 06
Tacks and small nails, .....	142	60 93
Hats and caps, .....	691	58 18
Lace goods, .....	1,238	56 01
Silk ribbons, .....	909	53 21
Cotton goods, .....	3,112	53 09
Iron and steel forgings, .....	482	50 80

INCREASES IN YEARLY EARNINGS, 1901 OVER 1896, TOGETHER WITH THE NUMBER OF WAGE-EARNERS IMMEDIATELY AFFECTED THEREBY, AS DEDUCTED FROM THE 1896 COMPARATIVE SERIES.

Industries.	Increase in yearly earnings 1901 over 1896.	
	Number of wage-earners in 1901.	
Carpet yarns, .....	688	\$50 21
Plumbers' supplies, .....	1,086	49 77
Paving brick, .....	553	47 54
Cotton yarns, .....	720	46 49
Woolen and worsted cassimeres, .....	1,971	46 29
Paper manufactories, .....	1,725	46 22
Umbrellas and parasols, .....	522	45 01
Rugs, yarns, etc., .....	3,209	45 00
Files, .....	415	43 46
Malleable iron, .....	1,905	42 43
Bicycles, .....	97	42 15
Cordage, rope, twine, etc., .....	2,294	41 33
Steel castings, .....	1,478	41 29
Engines, boilers, etc., .....	2,533	40 75
Hosiery, .....	6,756	39 88
Fire brick, .....	3,787	39 16
Men's, women's, misses' and children's shoes, .....	3,524	37 07
Cotton and woolen cloths, .....	5,341	33 96
Building brick, .....	1,954	33 89
Wool hats, .....	538	30 60
Hardware specialties, .....	3,133	30 45
Boilers, tanks, stacks, etc., .....	2,135	29 41
Suspenders, .....	198	28 86
Safes and vault doors, .....	224	28 38
Cigars, .....	8,866	27 93
Shirts and shirt waists, .....	2,419	27 82
Machinery, .....	6,342	25 77
Dress trimmings, braids, etc., .....	1,669	25 31
Scales, etc., .....	183	22 81
Building and structural iron work, .....	2,286	16 60
Edge tools, .....	1,097	14 69
Wagon and carriage axles and springs, ..	618	11 96
Paper boxes and envelopes, .....	2,138	8 78
Wire goods, .....	242	8 39
Pianos and organs, .....	150	2 73
Iron specialties, .....	53	34



THE 15 INDUSTRIES SHOWING DECREASES IN YEARLY EARNINGS 1901 OVER 1896, TOGETHER WITH THE NUMBER OF WAGE-EARNERS IMMEDIATELY AFFECTED THEREBY AS DEDUCTED FROM THE 1896 COMPARATIVE SERIES.

Industries.	Number of wage-earners in 1901.	Decrease in
		yearly earnings 1901 over 1896.
Steam pumps, etc., .....	231	\$99 56
Neckwear, .....	181	66 68
Wire, .....	258	47 70
Silk broad goods, thrown silk, etc., .....	4,033	32 72
Woolen blankets, flannels, etc., .....	912	30 13
Silk broad goods and ribbons, .....	2,400	24 07
Bolts, nuts, etc., .....	1,573	20 64
Worsted woolen and cotton yarns, .....	2,277	12 54
Wire rope, .....	393	11 96
Pottery, .....	171	10 83
Bath boilers, tanks, etc., .....	44	9 81
Tinware, .....	461	9 71
Knit goods, underwear, .....	2,980	5 02
Iron fences and railings, .....	220	4 75
Iron vessels and engines, .....	6,268	1 55

The total number of wage earners employed in this series in 1901 was 192,972 as against 131,260 in 1896, an increase of 61,712 or over 47 per cent. The yearly earnings were \$499.95 as against \$381.56 in 1896, an increase of 67.39, or 17.9 per cent. It will be remembered that all statements of earnings include both skilled and unskilled labor.

It will be noticed that this series embraces many textile and other industries in which the employment of female help not only predominates, but in which many children are employed.

#### VALUE OF PRODUCTION.

The value of the entire production as set forth in this series for 1901 was \$370,625,709, as against \$188,038,106 in 1896, an increase of \$182,587,603, or 97.1 per cent.

The capital invested in 1901 was \$253,190,931, an increase over 1896 of \$53,081,066, or 26.5 per cent.

## PIG IRON.

Pennsylvania produced 7,364,295 gross tons of pig iron in 1901, an increase over 1900 of 992,607 tons or 15.6 per cent, or reckoning back a period of five years to 1896, an increase of 3,337,945 tons or 82.9 per cent.

The capital invested to bring about this production was \$152,075,575, an increase of \$79,886,791 over 1900 or 110.6 per cent. This 1901 capital is an increase of fully three times the capital invested five years ago.

The market or realized value of the production for 1901 was \$106,883,000 as against \$105,449,923 in 1900, an increase of 1.4 per cent, and as against \$45,172,039 in 1896, an increase of 136.7 per cent.

The average realized value per ton was \$14.52 in 1901, a decrease from 1900 of \$2.03, but an increase over 1896 of \$3.31.

The aggregate wages paid out, \$8,646,479, was an increase over 1900 of \$146,285, or 1.7 per cent, and an increase over 1896 of \$4,057,314, or 88.4 per cent.

The average yearly earnings for all wage earners, skilled and unskilled, \$586.24, was an increase over 1900 of \$47.74 or 8.9 per cent., and an increase over 1896 of \$189.94 or 47.9 per cent.

The average daily wage, \$1.85, was an increase over 1900 of eighteen cents, and an increase over 1896 of forty-eight cents or 35 per cent.

The number of wage earners employed 14,749 was a decrease from 1900 of 1,036 or 6.6 per cent, but an increase over 1896 of 3,169, or 27.4 per cent.

The table of production by counties shows that Allegheny county produced 50 per cent of the entire production of the State, and that practically three-fourths of the production came from west of the Allegheny mountains.

## STEEL.

The production of 7,959,720 gross tons of all kinds of steel for 1901 was an increase over 1900 of 1,702,945 tons or 27.2 per cent, and an increase over 1896 of 4,614,191 tons or 137.9 per cent. The 4,319,144 tons of bessemer was an increase over 1900 of 830,575 tons or 23.8 per cent, and an increase over 1896 of 2,026,330 tons or 88.4 per cent. The 3,554,828 tons of open hearth was an increase over 1900 of 851,860 tons or 31.5 per cent, and an increase over 1896 of 2,545,220 tons or 252 per cent. The 85,748 tons of crucible and other processes was an increase over 1900 of 21,248 tons or 32.9 per cent, and an increase over 1896 of 42,641 tons or 98.9 per cent.

The table of production by counties shows that Allegheny county produced 64.6 per cent of the entire production of steel in the State, and that over 80 per cent came from counties west of the Allegheny mountains.

#### ROLLED IRON AND STEEL.

The capital invested of \$232,108,715 includes the capital invested in the production of steel by the rolling mills, and is an increase over 1900 of \$48,102,040 or 26.1 per cent, and an increase over 1896 of \$108,157,398 or 87.2 per cent.

The production of 1,406,532 gross tons of rails in 1901 was an increase over 1900 of 208,434 tons or 17.4 per cent, and an increase over 1896 of 731,881 tons or 108.5 per cent. The production of 1,590,502 gross tons of plates and sheets includes black plate and other sheets made by the tin works. It is a decrease from the production of 1900 of 7,532 tons or 0.5 per cent, but an increase over the production of 1896 of 959,641 tons or 152.1 per cent. The production of cut nails and cut spikes, as will be seen, was 37,349 gross tons as against 24,289 tons in 1900 an increase of 13,060 tons or 53.3 per cent, and an increase over 1896 of 8,509 tons or 29.5 per cent. Comparison of the production of structural shapes, 916,013 gross tons, cannot be made for the reason that the Bureau has not made a separation of this form of rolled production in other years. The production of 4,717,941 gross tons of Other Rolled Products includes bar, rods and other forms of rolled production than that above enumerated, and billets sheet bar, tin plate bar, etc., not worked into a further finished form by the mills reporting. For the purpose of comparison with the so-called "Finished Form" of other years, eliminate 1,665,360 tons billets, etc., and a production of 7,002,977 gross tons is left for iron and steel rolled into finished form, an increase over 1900 of 1,065,943 gross tons, or 17.9 per cent, and an increase over 1896 of 3,658,447 gross tons, or 109 per cent.

The value of this entire production as given, \$298,284,259, does not include the production of the tin plate works. While neither the figures given on page 612, as the production of rolled iron and steel for the State nor its value are free from twice counting, yet all other presentations relative thereto, such as capital invested, persons employed and wages, are true as relative to the production of rolled iron and steel of the State. The difficulty lies in a partial twice counting of the production of this class of billets, etc., and a twice counting of the corresponding value. While this form of production has passed through an initiatory process of rolling, if not further treated by the mills reporting, it goes to other mills and is by them reported to us in a more finished form. If these billets, etc., have been worked into a further finished form by the mills reporting,



they are not considered in our presentation of Rolled Iron and Steel, either as to tonnage or value, but to show a completeness as to each mill reporting, the surplus of billets, etc., that is to say, the tonnage of this form of rolled production sold on the market, is considered as a part of the production and classified in our presentation with other products. However, it will be readily seen that to the extent that these billets, etc., were made into a further finished form by other mills of Pennsylvania and reported to us as rails, sheets, finished bar shapes, etc., to count their tonnage and value as originally reported would be to that extent not only to twice count tonnage, but to twice count values. To avoid this difficulty, an effort was made to get from each mill reporting a separation of the tonnage of billets, etc., sold to Pennsylvania mills, with corresponding value, from that sold to mills outside of the State, and while this separation could not be obtained with entire accuracy, every effort was made by the mills reporting to give us the most intelligent figures possible, and the result is that 1,425,833 tons of billets, etc., included in the tonnage of other rolled products should be eliminated, leaving for this class of rolled iron and steel, 3,292,108 gross tons, and leaving the actual rolled production of the State for 1901, 7,242,504 gross tons, instead of 8,668,337 as reported by the mills, and as tabulated in the presentation of rolled iron and steel, page 612. For this elimination \$30,589,076, should be deducted from the \$298,284,259 aggregate value as shown on the same page of this report, leaving a net value of \$267,695,183 for Pennsylvania's production of rolled iron and steel.

The number of workmen employed in 1901 was 86,086; aggregate of wages paid \$53,334,787.

The yearly earnings skilled and unskilled were \$619.55, an increase over 1900 of \$45.58 or 7.9 per cent, and an increase over 1896 of \$174.66 or 39.3 per cent.

The average daily wage was \$2.21, an increase over 1900 of ten cents or 4.7 per cent, and an increase over 1896 of forty-four cents or 24.8 per cent.

The table of production shows that Allegheny county produced 58.8 per cent of the entire production of rolled iron and steel of the State, and that less than 25 per cent came from counties east of the Allegheny mountains.

#### TIN PLATE.

The capital invested in the tin plate works manufacturing their own black plate was \$10,525,000 for 1901, an increase over 1900 of \$753,112 or 7.8 per cent, and an increase over 1896 of \$6,897,725 or 190.2 per cent.

The production of 435,628,000 pounds of black plate for tinning was an increase over 1900 of 123,626,000 pounds or 39.6 per cent, and an increase over 1896 of 277,321,510 pounds or 175.2 per cent. The

dipping works combined was 421,640,000 pounds, an increase over 1900 of 123,786,000 pounds or 41.6 per cent, and an increase over 1896 of 282,051,297 pounds or 202.1 per cent.

The average value per base box of 100 pounds of the tin andterne plate produced by the black plate tin works was \$4.00 and the average value per base box of 100 pounds of the tin andterne plate produced by the dipping works was \$5.72.

The 8,188 workmen employed in the black plate tin works were an increase over 1900 of 794 persons or 10.8 per cent, and an increase over 1896 of 4,994 persons or 156.3 per cent.

The average yearly earnings for the skilled and unskilled of \$561.00 was an increase over 1900 of \$84.00 or 17.6 per cent, and an increase over 1896 of \$104.46 or 22.9 per cent.

It will be seen that the average daily wage of all wage earners, skilled and unskilled, in the black plate tin works was \$2.46, an increase over 1900 of six cents, and an increase over 1896 of sixty-six cents or 36.7 per cent.

From the table of production by counties it will be seen that Lawrence county produced 44.37 per cent of the entire production of black plate for tinning of the State; that Westmoreland follows with 23.96 per cent, Allegheny with 11.16 per cent, and that Mercer takes her place for the first time in the column of black plate producing counties with 6.97 per cent of the entire production. It will be observed that no counties, except Philadelphia and Allegheny, have dipping works, that is, works where tin andterne plate are made entirely from purchased black plate. Of this production Philadelphia had 15,693 net tons and Allegheny 6,412 net tons.

In the table of production of tin andterne plate by counties Lawrence heads the list as in the production of black plate.

#### CEMENT.

The presentation of the manufacture of cement in Pennsylvania for 1901 follows that of tin plate on page 626. The illustrations contained in the report cover not only all modern machinery, but give some idea of what is comprehended by a modern cement works.

It will be seen that fourteen firms or ownerships had active cement plants in 1901, with a capital invested of \$19,271,981, and a total production, based on barrels, of Portland, Natural and Improved cement, of 7,955,669, the market or realized value of which was \$7,334,891.

The number of workmen employed was 5,080. The aggregate wages paid to these workmen was \$2,212,457, an average yearly earnings of \$435.52 and an average daily wage of \$1.34.

The importance of this large production of cement in Pennsylvania should be appreciated, especially the large production of Portland cement, when it is taken into consideration that Portland

cement is the main ingredient in the construction of the heaviest masonry of the world. As set forth by Mr. Lesley in his contribution on the cement industry, it will be seen that in the early seventies the first effort at making Portland cement in Pennsylvania was made by Mr. David O. Saylor at Allentown, and that he was successful. In fact, this was practically the first effort, at least the first successful effort at making Portland cement in the United States. The second works established in Pennsylvania were at Wampum, Lawrence county, in 1875, by Mr. W. P. Shinn. The railroads had early learned the importance of cement in masonry, Mr. Shinn being connected with the Pittsburg, Fort Wayne and Chicago Railway. These works continued to operate under different ownerships until during the year 1901 they were rebuilt with all up-to-date machinery and appliances. Mr. Saylor's venture, the eastern counties having the rock necessary to the successful production of Portland cement, laid the foundation for the large works now located in that section.

Twenty years ago the production of Portland cement in the United States was only 85,000 barrels. In 1901 it was 12,711,225 barrels, of which Pennsylvania produced over 54 per cent. A study of the production, importation and consumption chart on page seventy-nine will not only be of great interest, but will be, to many, a very great surprise, as it will be seen from the chart that in 1901 the production of Portland cement in the United States almost equalled the consumption. And it certainly must be gratifying to realize and know that American Portland Cement is fully the equal of foreign Portland, and that the American consumer so far appreciates this equality as to practically use it to the exclusion of the imported. Attention is called to the active Cement works for 1901 in Pennsylvania, with their location and addresses, page 626.

#### TANNERIES.

The next presentation is that of tanning in Pennsylvania. It will be observed that in 1901 Pennsylvania had 200 active tanneries engaged in the business of tanning, currying and finishing leather; that the capital invested in this industry was \$64,582,517, with a value of production of \$69,202,533, which does not include any of the by-products. The number of workmen employed was 15,565, of which 14,307 were males, 545 females and 713 children.

The aggregate of wages paid out was \$6,580,552. The average yearly earnings of the males was \$440.65, of the females \$259.13, of the children \$189.23, with an average daily wage for the males of \$1.47, females eighty-seven cents and children sixty-three cents.

The number of ownerships, by reason of the combination of capital, and the retirement from business of the smaller tanneries, has been materially reduced in the past ten years, although the production



has not been so effected. We submit the following table of some of the leading productions with corresponding values, for 1901 as compared with that of 1892.

Kinds.	1901.		1892.	
	Production.	Value.	Production.	Value.
Oak leather, .....	434,630	\$1,653,466	409,817	\$1,730,464
Hemlock, .....	7,708,431	22,837,428	6,488,026	19,164,969
Union, .....	2,900,437	12,220,732	2,747,684	9,792,844
Upper, .....	397,855	1,012,181	612,860	1,793,139
Kip and calf, .....	354,023	685,553	541,548	351,957
Goat skins, .....	28,492,260	25,090,390	16,443,641	12,813,145
Sheep skins, .....	778,773	346,990	1,113,105	560,180
Splits, .....	1,267,902	1,203,316	207,000	137,700
Harness, .....	364,158	2,137,819	444,372	2,099,803

While the two presentations vary somewhat as to increases and decreases, the valuation of the total output for 1901 is clearly set forth as \$13,713,555 in excess of that of 1892 or an increase of 24.8 per cent. The marked change is the increase in the tanning of goat skins, the number tanned in 1901 being 28,492,260 as against 16,443,641 tanned in 1892, an increase of 12,048,619 skins or 73.3 per cent, all of which increase belongs to the city of Philadelphia, as practically no goat skins are tanned in Pennsylvania outside of that city.

#### BOOTS AND SHOES.

The presentation of this industry on page 628 is the result of a close canvas, and may be relied upon in all its details. The directory which follows, is complete and correct as representing the factories active for any part of 1901. It is creditable to the industry in Pennsylvania that with 120 active factories in 1901, against 146 in 1900, as reported by the Federal Census, and a reduction of capital from \$6,860,480 to \$5,336,077, that the number of wage earners employed was increased 198. The number employed in 1901 being 9,342, as against 9,144 in 1900, and that the production was practically the same, that of 1900 being 12,387,168 pairs, as against 12,478,056 pairs in 1901, a falling off of only 90,888 pairs, which slight difference as relative to the production per employe, might readily be accounted for by as slight an increase in the quality of the goods produced. The difference in values would indicate that such conditions existed as the value of the production for 1901 was \$13,602,712, as against \$13,235,933 in 1900, an increase of \$366,779. This would seem the most reasonable explanation, since the increase in number of employed was largely in the number of males over 16, and not in the cheaper labor. The number of males over 16 reported by the Federal

Census was 5,291, our presentation for 1901, 5,438, an increase of 147. The increase in females over 16 was only 30. The Federal Census being 3,239, as against our presentation of 3,269, and there was but an increase of 21 in the number of children under 16, the total census showing 614, as against our presentation of 625.

The change in capital as relative to the value of the production places Pennsylvania in quite a different position in the comparison by States of the average amount of capital required for a product valued at \$100, than has heretofore been assigned her, dropping from 51.83, as set forth in the Census Bulletin No. 221, to 39.23 per cent.

It might be well to state that capital as set forth in the Bureau's presentation, is the capital invested in realty, buildings, machinery, tools, and all implements used in manufacturing, together with capital necessary to the conduct of the business.

It will be seen that the average earnings of males over 16 for the 280 days of operation, was \$403.11; females, \$241.44, and children under 16, \$123.18, and that the average daily wage for males over 16 was \$1.44; females, 86 cents, and children under 16, 44 cents.

#### RUBBER BOOTS AND SHOES.

Pennsylvania has but two rubber boot and shoe factories. These had a capital invested of \$800,000 and employed 621 males, 412 females and thirty children.

The average yearly earnings of the males was \$377.30, of the females \$220.35 and of the children \$105.33. Average daily wage, males, \$1.32, females seventy-seven cents and children thirty-seven cents.

The value of the total production was \$1,697,817.

#### AVERAGE DAILY WAGE.

On page 630 will be found a presentation of average daily wage as deducted from this report. It will be noticed that the presentation closes with the many industries that give employment, if not entirely to women and children, to a percentage so large as to make them of no value whatever as affecting the daily wage of males.

#### COMMUNICATIONS.

Letters from manufacturers in reply to a communication from the Bureau touching upon a question of most vital interest to manufacturers, the labor question, constitute the last presentation of the report. The expressions are quite varied, and many of the letters are full of interest and well worth reading.

A few of the tanning industry letters take up the question of the depletion of bark, with suggestive thoughts.

## THE FEDERAL CENSUS.

In connection with Pennsylvania's industrial condition we submit herewith an advance bulletin of the Federal Census Department for 1900 of Pennsylvania manufactures, followed by an industrial census of twenty cities of the State, showing number of establishments, capital invested, wage earners, aggregate wages, value, etc., together with deductions of the Bureau.

## PENNSYLVANIA.

	1900.	1890.	Per cent of increase.
Number of establishments, .....	52,185	39,339	32.7
Capital, .....	\$1,551,548,712	\$991,243,115	56.5
Wage-earners, average number, .....	733,834	570,393	28.7
Total wages, .....	\$332,672,676	\$263,375,215	26.1
Miscellaneous expenses, .....	134,344,269	74,841,458	79.5
Cost of materials used, .....	1,042,561,628	773,734,637	34.7
Value of products, including custom work and repairing, .....	1,835,104,431	1,331,791,901	37.5

## ALLEGHENY.

	1900.	1890.	Per cent of increase.
Number of establishments, .....	894	675	32.4
Capital, .....	\$50,163,003	\$22,253,243	125.4
Wage-earners, average number, .....	20,828	11,837	75.7
Total wages, .....	\$10,367,502	\$5,916,525	75.2
Miscellaneous expenses, .....	5,120,624	1,728,571	196.2
Cost of materials used, .....	29,481,871	14,231,758	107.2
Value of products, including custom work and repairing, .....	54,159,792	26,878,979	101.5

## ALLENTOWN.

	1900.	1890.	Per cent of increase.
Number of establishments, .....	491	382	28.5
Capital, .....	\$11,996,971	\$6,977,091	71.9
Wage-earners, average number, .....	8,447	6,293	59.6
Total wages, .....	\$3,150,970	\$1,910,882	64.9
Miscellaneous expenses, .....	1,310,643	532,875	146.0
Cost of materials used, .....	9,846,047	5,102,911	92.9
Value of products, including custom work and repairing, .....	16,917,722	8,876,565	90.9

## FEDERAL CENSUS—Continued.

## ALTOONA.

	1900.	1890.	Per cent of increase.
Number of establishments, .....	229	208	10.1
Capital, .....	\$7,298,819	\$7,955,423	*8.3
Wage-earners, average number, .....	7,638	6,216	22.9
Total wages, .....	\$4,533,828	\$3,440,298	31.8
Miscellaneous expenses, .....	296,551	241,121	23.0
Cost of materials used, .....	7,268,488	6,133,222	18.5
Value of products, including custom work and repairing, .....	12,877,528	10,497,019	22.7

## CHESTER.

	1900.	1890.	Per cent of increase.
Number of establishments, .....	315	201	56.7
Capital, .....	\$18,977,710	\$9,397,033	102.0
Wage-earners, average number, .....	7,682	6,559	17.1
Total wages, .....	\$3,462,196	\$2,807,341	23.3
Miscellaneous expenses, .....	1,222,400	608,831	100.8
Cost of materials used, .....	9,261,886	6,844,825	35.3
Value of products, including custom work and repairing, .....	16,421,725	11,864,899	38.4

\*Decrease.

## ERIE.

	1900.	1890.	Per cent of increase.
Number of establishments, .....	644	236	172.9
Capital, .....	\$20,418,016	\$12,812,594	59.4
Wage-earners, average number, .....	9,339	6,463	44.5
Total wages, .....	\$4,574,625	\$3,248,366	40.8
Miscellaneous expenses, .....	1,197,411	718,157	66.7
Cost of materials used, .....	9,107,305	6,145,680	48.2
Value of products, including custom work and repairing, .....	19,053,202	12,765,768	49.3

## HARRISBURG.

	1900.	1890.	Per cent of increase.
Number of establishments, .....	446	475	*6.1
Capital, .....	\$8,749,516	\$6,716,074	30.3
Wage-earners, average number, .....	7,362	6,314	16.6
Total wages, .....	\$2,949,544	\$2,947,291	0.1
Miscellaneous expenses, .....	646,950	428,757	50.9
Cost of materials used, .....	9,402,516	5,432,303	73.1
Value of products, including custom work and repairing, .....	16,064,597	10,538,444	52.4



## FEDERAL CENSUS—Continued.

## JOHNSTOWN.

	1900.	1890.	Per cent of increase.
Number of establishments, .....	248	113	119.5
Capital, .....	\$16,940,450	\$13,280,296	27.6
Wage-earners, average number, .....	6,116	5,369	13.9
Total wages, .....	\$3,213,189	\$2,879,569	11.6
Miscellaneous expenses, .....	1,922,080	789,343	143.5
Cost of materials used, .....	14,445,126	13,137,331	10.0
Value of products, including custom work and repairing, .....	22,559,890	18,422,989	22.5

## LANCASTER.

	1900.	1890.	Per cent of increase.
Number of establishments, .....	738	599	23.2
Capital, .....	\$10,803,464	\$7,691,314	40.5
Wage-earners, average number, .....	9,349	7,330	27.5
Total wages, .....	\$3,323,748	\$2,219,917	49.7
Miscellaneous expenses, .....	1,193,997	691,291	72.7
Cost of materials used, .....	\$,342,709	6,306,495	32.3
Value of products, including custom work and repairing, .....	16,370,281	11,361,535	44.1

\*Decrease.

## McKEESPORT.

	1900.	1890.	Per cent of increase.
Number of establishments, .....	180	118	52.5
Capital, .....	\$17,876,016	\$10,979,812	62.8
Wage-earners, average number, .....	7,605	6,078	25.1
Total wages, .....	\$4,370,381	\$3,189,558	37.0
Miscellaneous expenses, .....	428,226	737,562	*41.9
Cost of materials used, .....	22,309,161	10,617,338	110.1
Value of products, including custom work and repairing, .....	37,074,136	17,432,721	112.7

## PHILADELPHIA.

	1900.	1890.	Per cent of increase.
Number of establishments, .....	15,888	18,166	*12.5
Capital, .....	\$476,591,792	\$375,249,715	27.0
Wage-earners, average number, .....	246,603	234,647	5.1
Total wages, .....	\$111,902,811	\$113,306,173	*1.2
Miscellaneous expenses, .....	55,578,272	39,615,476	40.3
Cost of materials used, .....	326,918,805	311,645,804	4.9
Value of products, including custom work and repairing, .....	603,587,392	577,234,446	4.6

## FEDERAL CENSUS—Continued.

## PITTSBURG.

	1900.	1890.	Per cent of increase.
Number of establishments, .....	1,937	1,420	36.4
Capital, .....	\$193,122,400	\$108,368,838	78.2
Wage-earners, average number, .....	69,953	52,963	32.1
Total wages, .....	\$36,669,563	\$29,889,486	22.7
Miscellaneous expenses, .....	15,292,662	7,561,199	102.3
Cost of materials used, .....	116,830,084	69,892,195	67.2
Value of products, including custom work and repairing	203,238,426	126,859,657	60.2

## READING.

	1900.	1890.	Per cent of increase.
Number of establishments, .....	843	435	93.8
Capital, .....	\$27,975,628	\$14,083,374	98.6
Wage-earners, average number, .....	19,165	12,211	56.9
Total wages, .....	\$7,544,950	\$4,780,470	57.8
Miscellaneous expenses, .....	5,085,456	1,042,366	387.9
Cost of materials used, .....	19,089,332	12,009,332	59.0
Value of products, including custom work and repairing,	36,902,511	20,855,165	76.9

\*Decrease.

## SCRANTON.

	1900.	1890.	Per cent of increase.
Number of establishments, .....	710	177	301.1
Capital, .....	\$19,954,525	\$16,237,271	22.9
Wage-earners, average number, .....	12,669	8,825	43.6
Total wages, .....	\$5,191,522	\$3,928,834	32.1
Miscellaneous expenses, .....	1,857,881	874,621	112.4
Cost of materials used, .....	18,411,022	16,922,753	8.8
Value of products, including custom work and repairing,	27,646,418	24,341,745	13.6

## WILKES-BARRE.

	1900.	1890.	Per cent of increase.
Number of establishments, .....	438	270	62.2
Capital, .....	\$10,501,537	\$5,598,139	87.6
Wage-earners, average number, .....	5,977	4,141	44.3
Total wages, .....	\$2,286,676	\$1,808,226	26.5
Miscellaneous expenses, .....	1,142,358	578,640	97.4
Cost of materials used, .....	5,167,777	4,026,579	28.3
Value of products, including custom work and repairing,	10,758,348	7,746,371	38.9



FEDERAL CENSUS—Continued.

WILLIAMSPORT.

	1900.	1890.	Per cent of increase.
Number of establishments, .....	396	302	31.1
Capital, .....	\$9,863,811	\$12,335,423	*20.0
Wage-earners, average number, .....	5,595	5,653	*1.0
Total wages, .....	\$2,065,930	\$2,271,531	*9.1
Miscellaneous expenses, .....	517,059	626,646	*17.5
Cost of materials used, .....	6,420,337	5,919,284	8.5
Value of products, including custom work and repairing, .....	11,190,600	11,107,037	0.8

YORK.

	1900.	1890.	Per cent of increase.
Number of establishments, .....	464	350	32.6
Capital, .....	\$9,640,784	\$3,842,453	150.9
Wage-earners, average number, .....	7,785	3,669	112.2
Total wages, .....	\$2,679,175	\$1,320,418	102.9
Miscellaneous expenses, .....	798,453	358,635	122.6
Cost of materials used, .....	6,078,070	3,170,840	91.7
Value of products, including custom work and repairing, .....	11,961,706	5,968,223	100.4

\*Decrease.

EASTON.

	1900.	*1890
Number of establishments, .....	285	.....
Capital, .....	\$4,829,879	.....
Wage-earners, average number, .....	3,912	.....
Total wages, .....	\$1,516,525	.....
Miscellaneous expenses, .....	485,029	.....
Cost of materials used, .....	3,794,496	.....
Value of products, including custom work and repairing,.....	6,746,078	.....

NEW CASTLE.

	1900.	*1890.
Number of establishments, .....	215	.....
Capital, .....	\$13,308,220	.....
Wage-earners, average number, .....	4,992	.....
Total wages, .....	\$3,226,669	.....
Miscellaneous expenses, .....	491,336	.....
Cost of materials used, .....	13,646,648	.....
Value of products, including custom work and repairing,.....	21,179,072	.....

## FEDERAL CENSUS—Concluded.

## NORRISTOWN.

	1900.	*1890.
Number of establishments, .....	210	.....
Capital, .....	\$4,069,449	.....
Wage-earners, average number, .....	3,429	.....
Total wages, .....	\$1,168,942	.....
Miscellaneous expenses, .....	418,854	.....
Cost of materials used, .....	2,467,861	.....
Value of products, including custom work and repairing, .....	4,821,745	.....

## SHENANDOAH.

	1900.	*1890.
Number of establishments, .....	78	.....
Capital, .....	\$374,057	.....
Wage-earners, average number, .....	210	.....
Total wages, .....	\$88,555	.....
Miscellaneous expenses, .....	96,929	.....
Cost of materials used, .....	180,224	.....
Value of products, including custom work and repairing, .....	479,336	.....

\*Not reported separately in 1890.

AVERAGE YEARLY EARNINGS OF SKILLED AND UN-  
SKILLED WAGE-EARNERS IN PENNSYLVANIA AND IN 20  
CITIES OF THE STATE FOR 1900 AS DEDUCTED FROM THE  
FOREGOING FEDERAL CENSUS SHEETS.

New Castle, .....	\$646 37
Altoona, .....	593 59
McKeesport, .....	574 67
Johnstown, .....	525 37
Pittsburg, .....	524 20
Allegheny, .....	497 77
Erie, .....	489 84
Philadelphia, .....	453 77
Chester, .....	450 69
Shenandoah, .....	421 69
Scranton, .....	409 78
Harrisburg, .....	400 64
Reading, .....	393 68
Easton, .....	387 66
Wilkes-Barre, .....	382 58
Allentown, .....	373 03
Williamsport, .....	369 25
Lancaster, .....	355 52
York, .....	344 15
Norristown, .....	340 89
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Average of the State, .....	452 50
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